UMATILLA RIVER BASIN ANADROMOUS FISH HABITAT ENHANCEMENT PROJECT

1993 ANNUAL REPORT

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ABSTRACT

The Umatilla Basin Anadromous Fish Habitat Enhancement Project is funded under the -Northwest Power Planning Council's Columbia River Basin Fish and Wildlife . Program Measure 704 (d) (1) 34.02 and targets the improvement of water quality and restoration of riparian areas, holding, spawning and rearing habitats of steelhead, spring and fall chinook and coho salmon.

The project focused on implementing instream and riparian habitat improvements on private lands on the Umatilla Indian Reservation ('hereafter referred to as Reservation) from April 1, 1988 to March 3 1, 1 992. These efforts resulted in enhancement of the lower l/4 mile of Boston Canyon Creek, the lower 4 river miles of Meacham Creek and 3.2 river miles of the Umatilla River (downstream of the Meacham Creek confluence upstream to the Reservation East Boundary). In 1993, the project shifted emphasis to a comprehensive watershed approach consistent with other basin efforts and began to identify upland and riparian watershed-wide causative factors impacting fisheries habitat and natural fisheries production capabilities throughout the Umatilla River Watershed. Maintenance of existing habitat improvement projects was included under this comprehensive approach.

Maintenance of existing gravel traps, instream and bank stabilization structures was required within project areas during the reporting period due to spring flooding damage and high bedload movement. Maintenance activities were completed between river mile (RM) 0.0 and RM 0.25 Boston Canyon Creek,' between RM 0.0 and RM 4 Meacham Creek and between RM 78.5 and RM 79 Umatilla River.

Habitat enhancement areas were seeded with native grass, legume, shrub and wildflower mixes and planted with willow cuttings to assist in floodplain recovery, stream channel stability and filtering of sediments during high flow periods.

Water quality monitoring continued for temperature and turbidity throughout the upper Umatilla River Watershed. Survey of cross sections and photo documentation of riparian recovery within the project areas provided additional baseline data.

Physical habitat surveys were conducted to characterize habitat quality and to quantify various habitat types by area. This information will be utilized to assist in identification of habitat deficient areas within the watershed in which to focus habitat'restoration efforts. These efforts were coordinated with the Umatilla Basin Natural Production Monitoring and Evaluation (UBNPME) Project.

Poor land use practices, which have altered natural floodplain dynamics and significantly reduced or eliminated fisheries habitat began to be identified in the Mission Creek Subbasin. Completed information will later be incorporated into a data layer for a Geographic Information System (GIS) data base. This effort is being coordinated with the U.S. Soil Conservation Service (SCS).

Initial scoping meetings were conducted to address watershed health impacts in the upper Umatilla Watershed and the Wildhorse Creek. Subbasin. Landowners, sportsman clubs, special interest groups and resource agencies participated in identification of poor land use practices and in development of long term innovative methods to improve land use practices impacting fisheries habitat.

Development of fifteen year riparian easements continued on lower Meacham Creek. The addition of two properties into the project area on Meacham Creek during the 1994 - 95 work period will provide nearly complete project coverage of lower Meacham Creek corridor areas on the Reservation.

ACKNOWLEDGMENTS

This project was funded by the Bonneville Power Administration. The Confederated Tribes of the Umatilla Indian Reservation. thank Jerry Bauer and other Bonneville **Power** Administration personnel for their assistance. Thanks also to Tim Bailey of 'the Oregon Department of Fish & Wildlife, Ed Calame of the Umatilla National Forest and Bob Adelman and Stephen Caruana of the U.S. Soil Conservation Service for technical input and assistance.

We would like to acknowledge the cooperating landowners who supported our efforts and provided important background on properties in the project areas.

Thanks also **to** Confederated Tribes of the Umatilla Indian Reservation staff, whose cooperation and contributions are evident in this report. Special thanks to Ken Hall, David McKay and Neal Alexander for the long hours monitoring habitat enhancements, and implementing and maintaining improvements in project areas, to Gary James for support and guidance, and to Joe Richards for administration of this agreement.

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INTRODUCTION

This Umatilla River Basin Anadromous Fish Habitat Enhancement Project Report covers work accomplished by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) from May 1, 1993 through April 30, 1994 as part of the Umatilla Basin Fisheries Restoration Program. This project is funded under the Northwest Power Planning Council's Columbia Basin Fish and Wildlife Program, . Measure 704 (d) (1) 34.02 to partially mitigate for losses of salmon and steelhead populations in the Columbia River Basin from the construction and operation of hydroelectric dams.

Significant effort and funds have been directed at restoration of anadromous fish in the Umatilla River Basin. This habitat project is one element in the comprehensive Umatilla Basin Fisheries Restoration Program which also includes artificial production, adult and juvenile passage improvements (ladders, screens and trap and haul), instream flow enhancement and monitoring and evaluation. Emphasis on watershed-wide habitat is needed for protection and enhancement of the natural production capabilities in the basin.

The project represents a continuation and evolution of existing efforts to improve natural production in the Umatilla River Basin. The goal of this project is to enhance natural production of existing summer steelhead and re-introduced chinook and coho salmon in the Umatilla River Basin. Land use practices in the watershed and existing fish and riparian habitats are being analyzed to identify and address the watershed-wide causative factors to reduced fish production capability. Existing habitat projects in the basin, which have only addressed perennial instream and riparian habitats, are being integrated and expanded to create a more comprehensive watershed approach consistent with other basin efforts. The project will help guide implementing agencies and CTUIR in promoting anadromous fish rebuilding plans, and recommend necessary changes to management systems.

The project will provide an integrated and comprehensive information base. Technical integration and coordination is being provided by utilizing a GIS data base for such components as habitat condition, land ownership, land use, ecotype and proposed management/restoration actions. The project complements ongoing fish passage and artificial production projects already in place in the basin and will integrate existing on-the-ground management systems and programs on private and public lands with restoration activities to better justify expenditure of funds and time. Stream habitat surveys, summaries of existing survey information and follow up surveys are coordinated with CTUIR's UBNPME Project. Remedial measures will be implemented to reduce or eliminate detrimental land activities where possible. Continued operations and maintenance of existing enhancement projects are included under this integrated approach.

The restoration of anadromous fisheries resources in the Umatilla River Basin has been ***a*** coordinated effort between CTUIR, local, state and federal agencies and the agricultural community. Examples include the Umatilla River Basin Anadromous Fish Habitat Enhancement Project, the Umatilla Basin Project, the Umatilla River Subbasin Salmon and Steelhead Production Plan and development of the Umatilla Hatchery and associated artificial production plans. This coordination has been continued and expanded through development of scoping groups comprised of local land owners, special interest groups, sportsman clubs and resource agencies formed to identify issues and develop creative solutions to land use problems impacting fisheries habitat in the basin.

DESCRIPTION OF PROJECT AREA

Meacham Creek is a major tributary to the Umatilla River, entering at RM 79. It drains approximately 165 square miles and produces 145,000 acre-feet annually at RM 5 near the head of the project area. The Umatilla River is *a* tributary to the Columbia River at RM 289. It has a drainage basin of 308 square miles below the confluence of Meacham Creek. The principle aquifer is quaternary alluvium composed of unconsolidated sand and gravel, and some silt. Alluvium may reach a depth of up to 12 feet (Gonthier and Harris 1975).

Boston Canyon Creek, entering Meacham Creek at RM 2.1, is the largest tributary to Meacham Creek within the reservation. It contributes over 4,000 acre-feet annually to Meacham Creek from a drainage basin of approximately 5.5 square miles. It runs over and through large alluvial deposits as it enters the Meacham Creek floodplain.

The project area includes the lower 4 miles of Meacham Creek, the lower l/4 mile of Boston Canyon Creek, and the Umatilla River between RM 78.5 and RM 81.7. A map of the project area is illustrated in Figure 1.

Elevations in the project area range from 1,760 to 2,000 feet above sea level, giving the area an unusually long growing season. Stream gradients average less than two percent. Flooding in the project area usually occurs in late winter and spring as a result of a rain on snow event. The flood peaks tend to be high and the volumes large, but the duration of damaging stages seldom last more than a day or two (U.S. Army, Corps of Engineers 1975).

The project lies in a big game winter grazing zone as outlined by the CTUIR Land Development Code (1983). The primary'land use is livestock grazing from May to November. Timber harvest is permissible under a conditional use permit.

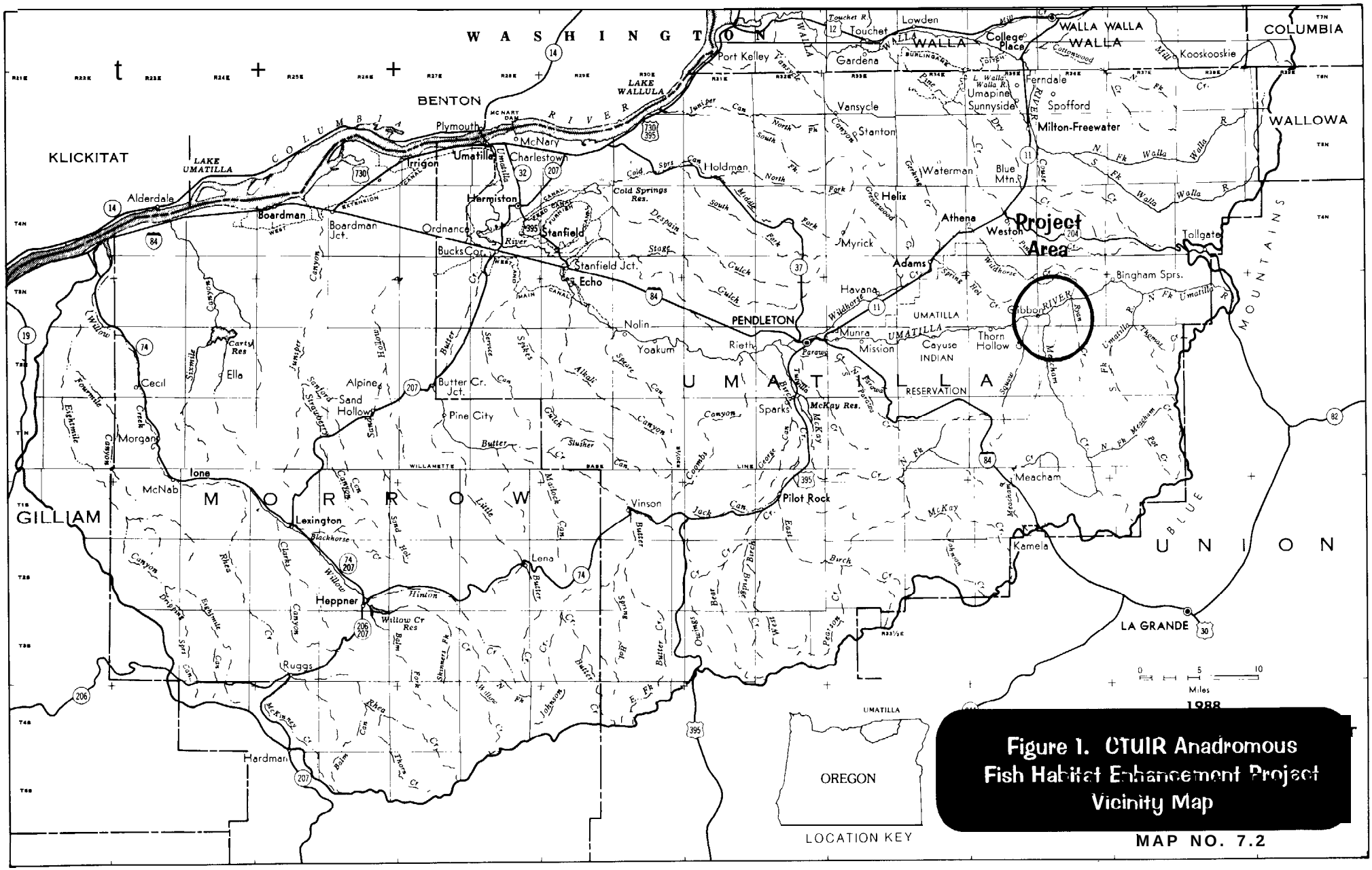

Figure 1. CTUIR Anadromous Fish Habitat Enhancement Project Vicinity Map

MAP NO. 7.2

METHODS AND MATERIALS

Objective I. Maintenance of Existinq Instream and Riparian Habitat Enhancement Projects.

1. Pre-construction Preparation:

a. Desiqn and Layout

Design and layout of maintenance to existing projects in Boston Canyon Creek, Meacham Creek and Umatilla River project areas consisted of determining the quantity and type of materials required to repair fencing, instream structures and streambanks and development of heavy equipment access sites, haul roads and boulder storage sites. Instream structures and streambank areas requiring maintenance were staked and/or flagged to provide site assistance to the ***heavy*** equipment contractor. The physical condition of all habitat improvement structures and riparian corridor fencing was evaluated following spring high flow events to determine if design and layout activities would be required.

b. Fill and Removal Permits

Tnstream work activities on the Umatilla Indian Reservation require obtainment of a Tribal Stream Zone Alteration Permit and a U.S. Army Corps of Engineers (COE) 404 Permit. Instream work activities off of the reservation generally require a General Authorization for Fish Habitat Enhancement from the Oregon Division of State Lands (ODSL) in addition to ***a*** COE 404 Permit. Applications for these permits should be completed and returned to the respective agencies a minimum of 90 days prior to anticipated instream work. Permitted instrearn work activities in the Umatilla Rivet- Basin are generally restricted to a July I - October 1 work window. This is the standard work window allowed by regulatory agencies in the Umatilla River Basin because this is when migrating and spawning salmonids are least likely to be impacted. Additional permits were applied for in the 1993 - 94 project period (spring of 1994) for instream work activities to be implemented in the 1994 - 95 project period (summer of 1994).

c. Con tracts

Heavy equipment, boulder supply and delivery and fencing sub-contracts wet-e developed and awarded for maintenance of habitat improvements within the existing project areas if it was determined that maintenance was necessary.

2. Maintenance of Existing Riparian and Fish Habitat Improvements:

a. Instream and Bank Stabilization Maintenance

Class 4 riprap was delivered to the Meacham Creek and Umatilla River project areas for maintenance of existing structures and continued enhancements. Structures were hilti cabled where needed to increase stability and long term structural integrity.

b. Maintenance of Gravel Traps

Gravel accumulations were removed from the gravel traps on lower Boston Canyon Creek because it was determined that fish passage to the upper watershed and fish releases from the Bonifer Pond Acclimation Facility were being impacted. These activities were coordinated with the CTUIR Fisheries Artificial Production Project.

c. Riparian Fencinq Maintenance

High tensile corridor fencing, gates and cross section fences in project areas were repaired as needed. Frequent fence inspections were conducted throughout the project period to ensure continued exclusion of livestock and to allow for continued riparian recovery inside of project areas.

d. Reveqetation

Willow and/or other hardwood tree species were planted along toe dikes, bank revetment structures and pool edges throughout enhancement areas to improve bank stability, provide insect drop, provide recruitable ***large*** woody debris and shading of the stream channel. Streambanks and disturbed sites within the project areas were seeded with native grasses to improve bank stability and to provide vertical surfaces to capture and retain sediments during high flow events.

Objective II. Monitor Habitat Enhancement and Bank Stabilization Structures and Riparian Recovery Within Project Areas.

1. Transect Measurements and Photo Point Monitoring:

CTUIR established 42 permanent transects at channel cross sections throughout the 5.5 river mile project areas on lower Meacham Creek and the Umatilla River prior to project

implementation to measure changes in channel morphology and vegetative response to habitat enhancements. These measurements are being repeated annually the first five years following initial construction activities and will be repeated at 3-5 year intervals thereafter.

Permanent photo points were established prior to project implementation in conjunction with the 42 permanent transects. Standardized photos continue to be taken each autumn to provide a visual record of changes in channel morphology and riparian recovery. A photo point notebook containing 3.5 mm slides of annual changes at each photo point is currently maintained by the CTUIR Fisheries Habitat Enhancement Project.

2. Physical Condition of Improvements and General Stream Hydraulics:

The physical condition of all improvements and general stream hydraulics were evaluated following spring 1994 high flow events to evaluate effectiveness and prescribe improvements and maintenance to occur in the summer 1994 as needed.

Objective III. Collect Baseline- Water Quality Data to Identify Limitinq Habitat Factors and to Quantify the Short and Long Term Effects of Habitat Enhancement Activities in the Umatilla River Basin.

1. Water Temperature Monitoring:

Ryan Tempmentor Thermographs were deployed within selected stream reaches (see Figure 2) in the upper Umatilla River Watershed. Several of these instruments were installed upstream, downstream and/or within project areas in Meacham Creek and the upper Umatilla River to monitor the effectiveness of habitat improvements on water temperature cooling. The remaining thermographs were installed in Wildhorse Creek, Buckaroo Creek, Squaw Creek and at RM 56 Umatilla River to obtain data on potential habitat limiting factors and existing water quality conditions. The thermographs were deployed in April/May 1993 and were recovered and downloaded into a computer program in December/January 1993 - 94. The thermographs collected one temperature reading per hour. Maximum, minimum and average daily water temperatures were compiled in tabular form. Water temperatures were graphed during the critical warmer months (June, July, August and September) to determine if temperatures are reached which could prove detrimental to salmonids.

Figure 2. Thermograph Locations 1993-94 Project Period	
	Location
1.	Umatilla River - RM 56 @ West Reservation Boundary
2.	Umatilla River - RM 78.5 (downstream mouth of Meacham Creek)
3.	Umatilla River - RM 79 (upstream mouth of Meacham Creek)
4.	Umatilla River - RM 81.7 @ USGS Gage Station No. 14020000 (East Reservation Boundary)
5.	Wildhorse Creek - RM 0 at confluence with Umatilla River
6.	Wildhorse Creek - RM 26
7.	Buckaroo Creek - RM 2
8.	Squaw Creek - RM 2
9.	Squaw Creek - RM 9 @ Little Squaw Creek confluence
10.	Meacham Creek - RM 2 @ USGS Gage Station No. 14020300
11.	Meacham Creek - RM 5.25 @ East Reservation Boundary

2. Suspended Sediment Monitoring:

Three Isco Model 2700 Wastewater Samplers were deployed to obtain estimates of suspended sediments. These sampling sites include RM 81.7 Umatilla River, RM 56 Umatilla River and RM 2 Meacham Creek. These sampling sites were located at or near thermographs and gage stations (see Figure 3 for gage station agency and identification numbers).

Samples were taken year round at 6 hour intervals to create a composite daily sample. The samples were processed monthly by Umatilla National Forest Service Personnel at the U.S. Forest Service (USFS) Lab in Pendleton, Oregon to determine Jackson Turbidity Units, conductivity and total dissolved solids. CTUIR staff correlated suspended sediment data with stream flow data collected from the adjacent gage stations to arrive at daily sediment loads (tons/day) estimates.

Figure 3. Suspended Sediment Monitoring Sites 1993-94 Project Period
Location
Umatilla River - RM 56 @ West Reservation Boundary
Umatilla River - RM 81.7 @ USGS Gage Station No. 14020000 (East Reservation Boundary)
Meacham Creek - RM 2 @ USGS Gaqe Station No. 14020300

Objective IV. Determine the Condition and Extent of Existinq Salmon and Steelhead Spawninq and Rearinq Habitat in the Umatilla River Basin.

1. Literature Review Existing Habitat Surveys:

A literature review was conducted to determine existing physical habitat data. Data gathered was organized by stream reach and information gaps identified. Since, variability in habitat and fish distribution were expected to be related to stream reach variables (valley width, valley type, channel form, adjacent landform, vegetation and/or land use), stream reaches served as a basis for sub-sampling in subsequent habitat and biological surveys. Stream reaches, which appeared to provide better coho salmon, chinook salmon and steelhead spawning and rearing habitat based on available biological and spawning survey date, were ranked as higher priorities.

2. Conduct Habitat Surveys:

CTUIR-DNR Fisheries Habitat Enhancement Personnel coordinated with the CTUIR UBNPME Project to conduct physical habitat surveys during the 1993 field season. Data collection methods developed by the Oregon Department of Fish and Wildlife (ODFW) Aquatic Inventory Program were utilized to sample various habitat parameters. Sufficient surveys will be conducted over a several year period to characterize habitat quality and quantify various habitat types by area in the surveyed stream reaches. This information should prove useful in identification of habitat deficient areas within the watershed in which to focus habitat restoration efforts. The UBNPME Staff conducted biological inventories in conjunction with the physical surveys. These surveys assist in determining the relations of anadromous fish habitat and,'

abundance in different types of stream channels from a total basin perspective. Physical habitat and biological inventory summaries compiled from the 1993 field season will be published in the 1992-93 UBNPME Annual Progress Report.

Objective V. Determine Existing Land Use Practices Impacting Future Natural Production Habitat Capabilities of Summer Steelhead and Chinook Salmon.

1. Identification of Major Land Use Practices:

Past and. present land use practices (dryland agriculture, irrigated agriculture, grazing, timber harvest, community developments, roads and railroads, etc.) within major subbasins of the Umatilla River Watershed started to be identified during the project period and a data layer based on this theme was initiated for development of a GIS data base. Individual land use practices will later be mapped by area. This effort is being coordinated with the CTUIR GIS Planning Staff.

2. Identification of Site Specific Detrimental Land Use Practices:

Areas where poor land use practices have altered natural floodplain dynamics and significantly reduced or eliminated critical fisheries habitat started to be identified. These practices include improper tillage methods, overgrazing, overharvest of timber, floodplain encroachment due to development, stream channel constrainment and downcutting from road and railroad building and maintenance activities, etc. Problem areas will be assigned a rating of poor, fair and good and this information will be incorporated into a data layer for a GIS data base. Maps of each major subbasin will later be developed illustrating where these problem areas occur. Areas throughout the watershed, which are determined to have poor quality habitat, will be targeted for habitat enhancement projects. This effort is being coordinated with SCS and the CTUIR GIS Planning Staff.

Objective VI. Encourage Public Support and Guidance in the Identification of Creative Solutions to Land Use Problems Impacting Fisheries Habitat Throughout the Umatilla River Basin.

1. Outreach Effort:

An extensive outreach effort at the local community level was conducted to identify interested individuals, special interest groups and agencies and encourage their involvement for scoping of issues,

identification of opportunities and development of mitigation efforts. This educational effort involved distribution of habitat/watershed literature, attending public and agency meetings to promote watershed restoration efforts and providing presentations to the public and special interest groups. Such activities serve to increase public awareness of habitat and watershed health issues in the Umatilla River Basin and foster landowner cooperation regarding habitat restoration efforts.

2. Scoping Group Development:

Scoping groups comprised of local landowners, sportsman clubs, special interest groups and resource agencies were formed in subwatershed areas to assist in identification of problems and to develop long term innovative methods of improving land use practices impacting fisheries habitat. A schedule was set, meetings conducted periodically and scoping group input documented.

Objective VII. Mitigate Impacts from Past and Ongoing Management Activities through the Implementation of Protective Measures.

1. Easements and Right-of-Way Agreements:

Fifteen year riparian easements are pursued and developed for habitat implementation activities ***on*** private properties throughout the Umatilla River Watershed. An attempt ***is*** made to address landowner needs (livestock water gaps, stream crossing sites, etc.) and incorporate these needs into the final project design. Developed easements protect habitat improvements and insure a fifteen year recovery period within project areas. The BIA requires ***a*** land survey of designated project area boundaries and the acquisition of a right-of-way agreement on private, tribally owned properties (trust lands), prior to pursual of an easement. These agreements require considerable effort and landowner coordination. Some easements developed during the 1993-94 work period will not be implemented on the ground until the 1994-95 work period.

2. Acquisition Land/Management Rights:

An attempt was made to identify properties available for purchase, containing significant reaches of high quality or potentially high quality anadromous salmonid habitat in the Umatilla River Basin, and explore funding opportunities for land acquisition. Properties purchased will be restored as needed and/or protective management measures implemented.

Management rights, including water rights, timber rights and grazing rights, can also be acquired to provide adequate fisheries habitat protection. Purchase of management rights would restrict landowners from various land use activities over a period of time. The term of an agreement is dependent upon the current habitat condition of the site being protected and the desired future condition.

3. Best Management Practices:

Private landowners were encouraged to adopt and implement Best Management Practices (BMP) on all lands within the Umatilla River Basin where present management strategies are resulting in continued degradation of habitat and fisheries resources. This effort ***was*** accomplished through public outreach and scoping (Objective VII.).

RESULTS AND DISCUSSION

Objective I. Maintenance of Existinq Instream and Riparian Habitat Enhancement Projects.

1. Pre-construction Preparation:

a. Design and Layout

It was determined that maintenance of existing instream and bank stabilization structures was needed during the 1993 field season. Project design and layout was completed for instream maintenance activities on RM 0.0 - 0.25 Boston Canyon Creek, RM 0.0 - 4 Meacham Creek and RM 78.5 - 79 Umatilla River.

b. Fill and Removal Permits

A nationwide permit 33 CFR 330.3 ***was*** obtained from COE to maintain instream improvement structures on Boston Canyon Creek, Meacham Creek and the Umatilla River. The permit is valid through May 2, 1996, two years beyond the date of issue. Stream Zone Alteration Permits ***were*** obtained from the CTUIR Water Resources Program for instream maintenance activities on Boston Canyon Creek, Meacham Creek and the Umatilla River for the 1993 and 1994 instream work periods. These permits were applied for during the 1992-l 993 project period.

Additional instream fill/removal permit applications for the placement of gravel sediment retention structures between RM 9.5 to RM 12 Wildhorse Creek (to be installed in the 1994 - 95 project period) were completed and submitted to the COE and ODSL for permit obtainment.

c. Contracts

A nine day heavy equipment sub-contract was issued to Harney County Gypsum Company on July 23, 1993 for instream and riparian maintenance in the Boston Canyon Creek, Meacham Creek and Umatilla River project areas.

2. Maintenance of Existing Riparian and Fish Habitat Improvements:

a. Instream and Bank Stabilization Maintenance

Humbert Excavating Inc. delivered 118 cubic yards of ***class*** four riprap to storage and structure sites in the Meacham Creek and Umatilla River project areas on July 23 through July 28. 1993. The riprap was utilized

by Harney County Gypsum Company to reset and repair instream structures and riparian enhancements damaged from high flow events. Structures repaired included nineteen rock wing deflectors, three retainer walls, four rock weirs, four sets of turning rocks, four sets of thalweg rocks and a section of riprap stream bank. Twenty-five trees were placed and hilti cabled to instream structures in Meacham Creek to increase cover for adult and juvenile salmonids. Tree and boulder cabling was performed by CTUIR Habitat Enhancement Project Personnel.

b. Maintenance of Gravel Traps

Gravel accumulations were removed from a gravel trap on Boston Canyon Creek to improve fish passage to the upper watershed. The CTUIR Fisheries Artificial Production Project sub-contracted with Pioneer Construction, Inc. to remove gravels from two additional gravel traps near the mouth of Boston Canyon Creek to minimize impacts to smolts released from the Bonifer Pond Acclimation Facility. All gravel trap maintenance activities were performed under the same instream fill and removal permits.

c. Riparian Fencing Maintenance

CTUIR Habitat Enhancement Project Personnel rebuilt nine rock jacks and reinstalled three cross-section fences damaged from high flow events within the Meacham Creek Project Area. No sub-contracted high tensile fence repairs were required during the 1993 - 94 project period.

d. Reveaeta tion

Boston Canyon Creek, Meacham Creek and Umatilla River project areas were seeded with native grass, legume, shrub and wildflower mixes in October, April and May of the 1993 - 94 project period to assist in stream channel stability and filtering of sediments during high flow periods. A native grass/legume seed mix, containing 32% reed canary grass, 27% cicer milkvetch, 15% sodar streambank wheatgrass, 10% sheep fescue, 9% mountain brome and 7% alsike clover, was broadcast in riparian corridor areas. A total of 200 lbs of this mix ***was*** applied within the project areas. A native grass/legume seed mix, comprised of 25% yellow sweetclover, 15% bluebunch wheatgrass, 15% western wheatgrass, 15% mountain ***brome, 15%*** sheep ***fescue and 15% canby*** bluegrass, was broadcast on terraces and dry sites within the project areas. A total of 300 Ibs of this mix was applied during the 1993 - 94 project period. A 20 Ib wildflower/shrub mix, containing 50% small

burnett, 25% winterfat and 25% blue flax, was broadcast on moist and dry sites throughout the project areas.

Willow cuttings were periodically planted in project areas throughout the 1993 - 94 work period. No intensive tree plantings' efforts were undertaken due to high natural recovery rates of alder and willow species in the riparian areas.

Umatilla County Weed Control addressed noxious weed problems in project areas on two occasions during the project period. Sub-contract funds were not required to treat noxious weeds on 'Reservation properties.

Objective II. Monitor Habitat Enhancement and Bank Stabilization Structures and Riparian Recover-v Within Project Areas.

1. Transect Measurements and Photo Point Monitoring:

Stream channel cross sections were measured **at** 16 previously established transect sites within the Meacham Creek Project Area to measure changes in channel morphology and to document riparian recovery. Slides were taken at the 42 photo point locations within the Boston Canyon Creek, Meacham Creek and Umatilla River project areas to document project recovery and to provide a visual record of annual changes within the floodplain.

2. Physical Condition of Improvements and General Stream Hydraulics:

The physical condition and structural integrity of improvements within project areas was evaluated following spring 1994 high flow events. Due to a relatively mild winter, it was determined that sub-contracts would **not** need to be developed for instream structure and high tensile fence maintenance in the 1994 - 95 work period.

Objective III. Collect Baseline Water Quality Data to Identify Limitinq Habitat Factors and to Quantify the Short and Lonq Term Effects of Habitat Enhancement Activities in the Umatilla River Basin.

1. Water Temperature Monitoring:

Thermographs were deployed at eleven locations, including two sites on Meacham Creek, two sites on Squaw Creek, **one** site on Buckaroo Creek, two sites on Wildhorse Creek and three sites on the Umatilla River (see

Figure 2 page 10 for River Mile locations). Stream temperature data was summarized into tabular form demonstrating maximum, minimum and average daily Celsius and fahrenheit temperatures during thermograph deployment periods. A binder containing annual water temperature tables is maintained in the CTUIR Habitat Enhancement Project office. Water temperatures have been graphed during critical warm season months (June, July, August and September) to determine whether temperatures were reached which could prove detrimental to anadromous salmonids. Graphed data can be viewed in Appendix A. Data collected from Squaw Creek RM 9 at the confluence with Little Squaw Creek was lost due to malfunction of the Ryan Tempmentor Thermograph when attempting to download this information into the computer.

Abnormally high temperature conditions during migration can contribute to outbreaks of disease among adult chinook salmon often resulting in prespawning mortality. Temperatures in excess of 68 F have been shown to result in impairment of chinook salmon. High stream temperatures may also stress juvenile steelhead during these summer months. Temperatures exceeding 73 F can prove detrimental to steelhead survival (ODFW, 1992).

Maximum water temperatures in Meacham Creek, Squaw Creek, Buckaroo Creek, Wildhorse Creek and the upper Umatilla River exceeded 70 F in late July and throughout much of August. Maximum stream temperatures exceeded 80 F near the mouth of Wildhorse Creek (drains into the Umatilla River at Pendleton) and at RM 56 Umatilla River from mid to late July. These stream temperatures were approximately 11 to 12 F higher than temperatures recorded at the U.S. Geological Survey (USGS) Gibbon Gage Station No. 14020000 upstream at RM 81.7 Umatilla River. This is *a* concern because migrating salmon must pass through these potentially lethal high temperatures prior to reaching more suitable temperatures upstream.

A two to three degree fahrenheit difference in average summer water temperatures existed between RM 2 and RM 5.25 in Meacham Creek with the warmer temperatures occurring downstream at RM 2 within the project area. This disparity should decrease as adjacent riparian vegetation within the project area recovers and solar inputs are reduced. During midsummer months, adequate shade will keep a stream 7 to 12 F than if exposed to direct sunlight (ODFW, 1992).

CTUIR Natural Production and Monitoring Personnel noted a maximum daily 1993 summer water temperature increase from 66 F in the North

Fork of Meacham Creek to 75.2 F downstream at RM 5.25 Meacham Creek and 12 F warmer average summer water temperatures below the mouth of Meacham Creek in the Umatilla River than those observed in the North Fork of Meacham Creek (Paul Kissner, per personal communication). CTUIR Natural Production and Monitoring Personnel also observed that in the North Fork of Meacham Creek daily average summer water temperatures were consistently below 57 F, and the percentage of adult spring chinook salmon prespawn mortality was the lowest in the Umatilla River Basin with 93.1 % successful spawning. As average water temperatures increased downstream in Meacham Creek and the Umatilla River, prespawning mortality increased significantly. Spring chinook spawning success was 88.4% from RM 6 Meacham Creek to the Camp Creek confluence, 33.3 % from Meacham Creek RM 3 to RM 6 and 69.2% from the Meacham Creek mouth to RM 3. Increased stream temperatures and high spring chinook prespawn mortalities in the lower reaches of Meacham Creek emphasize the need for continued habitat enhancements in this system.

2. Suspended Sediment Monitoring:

Daily suspended sediment data collected from three ISCO Model 2700 Wastewater Samplers was averaged and combined with gage station stream flow data to arrive at daily estimates of total sediment yield at RM 2 Meacham Creek, RM 56 Umatilla River and RM 81.7 Umatilla River. This information is presented in graphical form in Appendix B. Tabular daily sediment yield data is maintained at the CTUIR Habitat Enhancement Project office. Stream flows during 1993 ranged from a peak of 1960 cfs on March 24 to 11 cfs in late November at RM 2 Meacham Creek, a peak of 5680 cfs on May 5 to 46 cfs on September 29 at RM 56 Umatilla River, and a peak of 2810 cfs on May 4 to 42 cfs in September and October at RM 81.7 Umatilla River. The peaks in sediment yield correspond closely to annual high flow events in late winter and spring. Maximum recorded 1993 daily sediment yields of 16,254 tons per day at RM 2 Meacham Creek on March 25, 8,950 tons per day at RM 56 Umatilla River on March 24, and 1,170 tons per day at RM 81.7 Umatilla River on May 4 occurred during peak flow periods.

Periodic malfunctioning of the sediment samplers resulted in incomplete data. When possible, unavailable daily sediment yields were obtained by averaging sediment data obtained prior to and following the period of malfunction. These daily sediment yields were incorporated into corrected monthly sediment load calculations.

Flow data was unavailable for Oregon Water Resources Department (OWRD) Gage Station No. 14021000 at Pendleton for graphing of RM 56 Umatilla River sediment yields during the months of January, February and part of March. Some discrepancy exists in sediment yield data obtained at RM 56 Umatilla River because the sediment sampling station located at RM 56 is upstream from the Wildhorse Creek confluence, and flow data was obtained from OWRD Gage Station No. 14021000 at RM 55.25 Umatilla River downstream from the mouth of Wildhorse Creek. The CTUIR Water Resources Department plans to install a gage station at RM 56 in the near future. This should help to overcome this problem.

Objective IV. Determine the Condition and Extent of Existing Salmon and Steelhead Spawning and Rearing Habitat in the Umatilla River Basin.

1. Literature Review Existing Habitat Surveys:

A file and literature review was conducted to gather and compile existing physical habitat survey data and identify information gaps. Existing survey data was obtained from the CTUIR Fisheries Habitat Enhancement Project files, the ODFW Aquatic Inventory Program and the USFS. Stream reaches identified for subsequent habitat and biological surveys were mapped on 7.5 minute quadrangle maps and prioritized for sampling. This effort was coordinated with the CTUIR UBNPME Project.

2. Conduct Habitat Surveys:

Physical habitat surveys were conducted between the CTUIR UBNPME Project and the Habitat Enhancement Project on 26 stream miles in the Umatilla River Basin. Stream reaches surveyed included fifteen miles on Meacham Creek, six miles on Buckaroo Creek, two miles on Line creek, two miles on Boston Canyon Creek and one mile on a Boston Canyon Creek tributary. The UBNPME Project conducted biological inventories in conjunction with the physical surveys. Physical habitat and biological inventory summaries compiled from the 1993 field season have been published in the 1992 - 93 Umatilla Basin Natural Production Monitoring and Evaluation Annual Progress Report. Habitat survey data will be used to determine habitat deficient areas throughout the watershed in which to focus habitat restoration efforts.

Objective V. Determine Existing Land Use Practices Impacting Future Natural Production Habitat Capabilities of Summer Steelhead and Chinook Salmon.

1. Identification of Major Land Use Practices:

CTUIR Habitat Enhancement Project Personnel began to gather historical and current land use data regarding the Mission Creek Subbasin for development of a data layer based on this theme for a GIS data base to be developed during the 1994 - 95 project period.

2. Identification of Site Specific Detrimental Land Use Practices:

CTUIR Habitat Enhancement Project Personnel coordinated with the CTUIR Water Resources Program and SCS Conservationist, Bob Adelman, to begin to identify poor land use practices impacting fisheries habitat in the Mission Creek Subbasin. Identified poor land use practices will be incorporated into *a* GIS data layer for a GIS data base to be developed during the 1994 - 95 project period.

Objective VI. Encourage Public Support and Guidance in the Identification of Creative Solutions to Land Use Problems Impacting Fisheries Habitat Throughout the Umatilla River Basin.

1. Outreach Effort:

CTUIR Habitat Enhancement Project Personnel participated in the following outreach efforts during the project period:

Provided educational instruction and distributed literature regarding watershed health and fisheries habitat issues to Pendleton School District sixth grade elementary students at the 1993 Outdoor School over a 4 day period.

Coordinated with other resource agencies and Union Pacific Railroad (UPRR) regarding UPPR's proposed Blue Mountains Project and the potential environmental impacts expansion of the double mainline track through Meacham Creek Canyon could have on habitat and fisheries resources. Development of mitigation efforts to minimize habitat degradation caused from double track expansion activities and development of a cumulative impact assessment to mitigate for past detrimental UPRR railroad building and maintenance activities were discussed at several meetings.

. Attended Umatilla County Soil and Water Conservation District (SWCD) monthly meetings and the Blue Mountain Resource Conservation and Development (RC&D) annual meeting to update board members on Tribal fish habitat restoration activities in the Umatilla River Basin **and** to include their input in the watershed planning process.

. Attended an Adams, Oregon City Council Meeting to discuss poor land use practices in the Wildhorse Creek Subbasin impacting water quality and fisheries habitat and to encourage support in formation of a Wildhorse Creek Subbasin Scoping Group.

Coordinated with UPRR Personnel regarding the replacement of railroad right-of-way fencing adjacent to the Meacham Creek Project Area.

Provided a tour of Bonneville Power Administration (BPA) funded habitat enhancement areas on Meacham Creek and degraded habitat areas in the Wildhorse Creek Subbasin to U.S. Fish and Wildlife Service (USFWS) Personnel to demonstrate program successes and obtain future financial assistance (cost share dollars).

Participated with various local resource agencies to discuss and develop efforts to form a Umatilla River Basin Watershed Council compatible with OWRD's Strategic Management Group recommendations and Oregon House Bill 2215.

Provided tour of proposed 1994 - 95 Wildhorse Creek Demonstration Project to Umatilla County SWCD, Blue Mt. RC&D, Umatilla National Forest, ODFW and Umatilla County Planning Department to explain project objectives and obtain their support.

Provide tour of BPA funded habitat enhancement areas on Meacham Creek and proposed demonstration project on Wildhorse Creek to **the** Oregon Conservation Commission to demonstrate program successes and obtain future support from the SCS and Umatilla County SWCD in addressing agricultural impacts in upland watershed areas.

Participated in Umatilla River Basin Regulatory Work Group Meeting. The first public meeting was held to allow land owners in the lower Umatilla River Basin the opportunity to discuss and

express their concerns to the regulatory and commenting agencies regarding instream fill and removal permit applications. The focus of this group is to provide technical assistance to the landowners before submitting permit applications, provide a more streamlined permit review process for land owners and to address instream activities on a reach by reach basis to discourage unnecessary detrimental instream practices. CTUIR participated not only because of our role as a commenting agency, but also to address detrimental instream practices impacting watershed health.

Provided a presentation of detrimental land use practices impacting fisheries habitat in the Umatilla River Watershed and CTUIR's role in watershed management to Pendleton High School Agricultural Students.

Met with the Umatilla National Forest Team Leader, Carl Moss, and provided input regarding best allocation of USFS funds for watershed restoration projects on the Umatilla National Forest.

Provided a news story to the East Oregonian Newspaper to promote watershed' restoration efforts in the Umatilla River Basin and to encourage participation in CTUIR's public scoping process (see news article in Appendix C).

2. Scoping Group Development:

Initial scoping meetings were conducted to identify landowners, sportsman clubs, special interest groups and resource **agencies to assist** in identification of problems areas in major subwatersheds and in development of long term innovative methods of improving detrimental *land use* practices impacting fisheries habitat.

A scoping meeting was conducted on the evening of April 26, 1994 at *the* Reservation Long ***House to*** address watershed health impacts in ***the*** upper Umatilla River Watershed (included Umatilla River and all tributaries upstream of Mission, Oregon). Participants identified the following top three impacts to stream ***and*** watershed health: 1) agricultural practices, 2) lack of upland/riparian vegetation and 3) forestry practices. Participants indicated the following top three potential solutions to addressing watershed health impacts in the upper Umatilla River Watershed: 1) improved agricultural practices, 2) revegetation of upland and riparian areas and 3) erosion and sediment control. Thirty-eight people attended the scoping meeting.

A scoping meeting was conducted on the evening of April 28, 1994 at Weston-McEwen High School in Athena, Oregon to address watershed health impacts in the Wildhorse Creek Subwatershed. Participants identified the following top three impacts to stream and watershed health: 1) agricultural practice-s and related sedimentation problems, 2) forestry practices and 3) flooding concerns. Participants indicated the following top three potential solutions to addressing watershed health impacts in the Wildhorse Creek Subwatershed: 1) continuation of Federal Conservation Reserve Program, 2) improved agricultural practices (terraces, grass filter strips, grass waterways, etc.) and 3) riparian restorations (fencing and revegetation). Forty-five people attended the scoping meeting.

Participants **at** the scoping meetings were asked to complete General Questionnaires. Summaries of these questionnaires can be found in Appendix D. In addition, participants input, regarding 1) problems and issues in riparian areas, 2) riparian area potential solutions, 3) problems **and** issues in upland areas, and 4) upland area potential solutions, **was** tabulated at the meetings and is also summarized in Appendix D.

Future scoping meetings to obtain additional public input and to relay anticipated CTUIR Habitat Enhancement Project activities to landowners in these watershed areas will be conducted within the next several months.

Objective VII. Mitiqate Impacts from Past and Onqoinq Manaqement Activities through the Implementation of Protective Measures.

1. Easements and Right-of-Way Agreements:

Two properties on Meacham Creek were identified for 1994 - 95 habitat improvement project implementation. Both properties **are** Indian owned properties located between RM 4 and RM 5.5 Meacham Creek within the Reservation boundaries. Allotment 1232 is owned by Mrs. Merna Tovey, Mr. Emmet Williams, Ms. Fawn Williams and **Mrs.** Kathy Williams. Allotment 1138 is owned by **Mrs.** Cecelia Bearchum, Ms. Brenda Bearchum, Mrs. Theresa Johnson and Mrs. Eleanor Houle. All of these individuals indicated that they were interested and supportive of implementing habitat improvements on their respective properties. The BIA Umatilla Agency Real Property Management Office granted CTUIR permission to survey right-of-way areas (designated floodplain areas to be enclosed with high tensile fencing) on both properties on February 8, 1993.

The top of the Meacham Creek Project Area currently terminates at Allotment 1231 located at RM 4 Meacham Creek. Inclusion of Allotments 1232 and 1138 into the project area will provide protection and recovery of floodplain areas upstream to the South Reservation boundary at RM 5.5 Meacham Creek. The addition of these properties into the project area provides nearly full project coverage of lower Meacham Creek corridor areas on the Reservation with the exception of two small properties where the landowners have been unwilling to participate.

A survey sub-contract was awarded to recover or reestablish midpoint monuments on the two allotments in the Meacham Creek drainage, so that necessary right-of-way descriptions could be mapped and prepared to BIA standards. All right-of-way descriptions and mapping were completed by late April 1994. Fifteen year riparian easements will be developed with landowners during the 1994 - 1995 project period.

CTUIR Habitat Enhancement Project Personnel met with landowners and began negotiating 15 year riparian easements for enhancement of four properties located between RM 9.5 to 12.0 Wildhorse Creek. Improvement activities are anticipated to be implemented during **the** 1994 - 95 project period.

2. Acquisition Land/Management Rights:

No properties containing significant anadromous salmonid habitat or management rights were purchased during the project period. CTUIR Habitat Enhancement Personnel coordinated with CTUIR Wildlife Program Personnel to identify and integrate long term wildlife protection measures with fisheries habitat protection measures in critical upper watershed areas.

3. Best Management Practices:

Landowners were encouraged to adopt and implement BMP during **the** project period. This was accomplished through public outreach and scoping activities previously described in Objective VII.

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Reeve, R., S. Williams, J. Neal and J. Sanchez. 1988. Umatilla River Drainage Anadromous Fish Habitat Improvement Implementation Plan. March 1988. Available from: Bonneville Power Administration, Portland, Oregon 53 pages.

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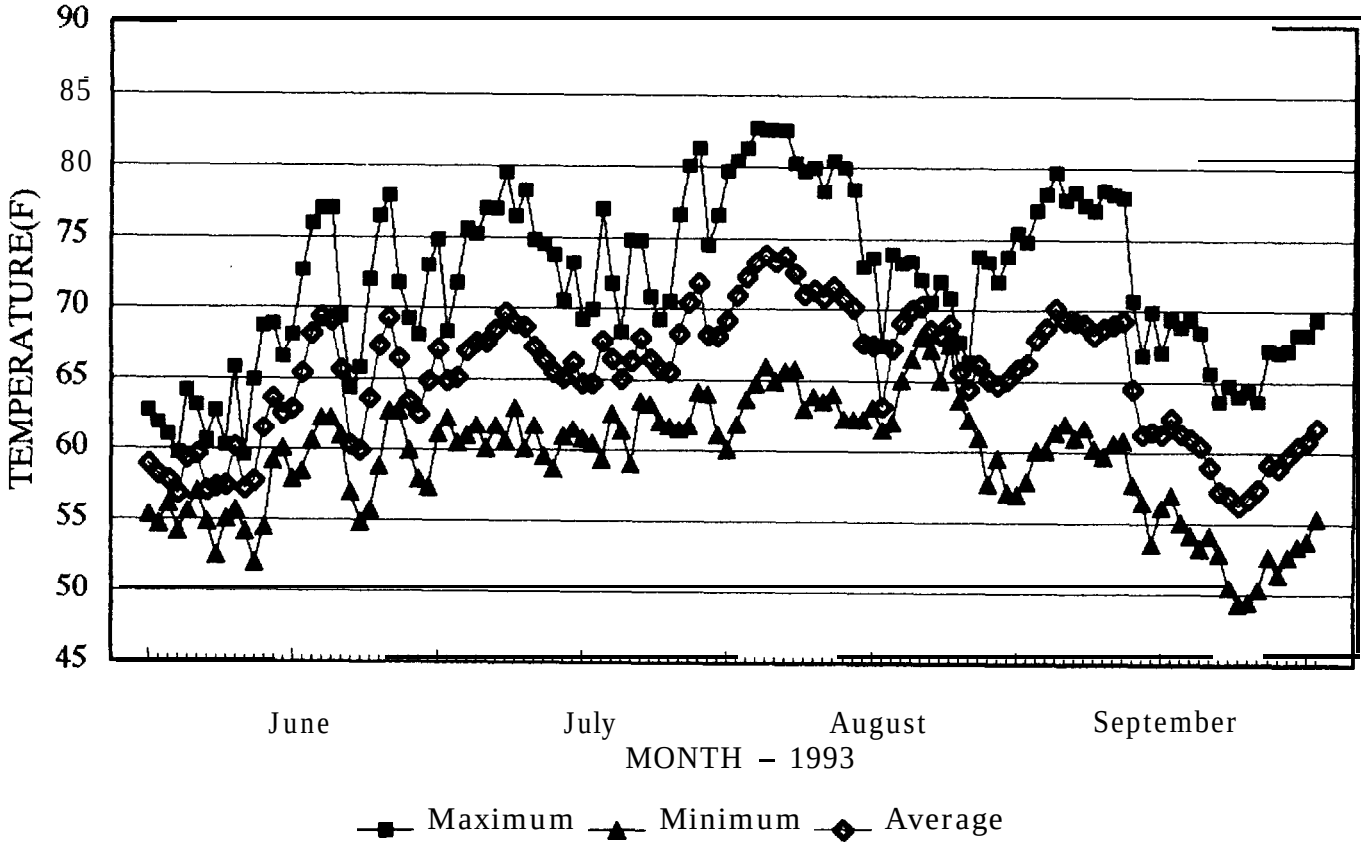
Appendix A

Water Temperatures Graphs

UMATILLA RIVER

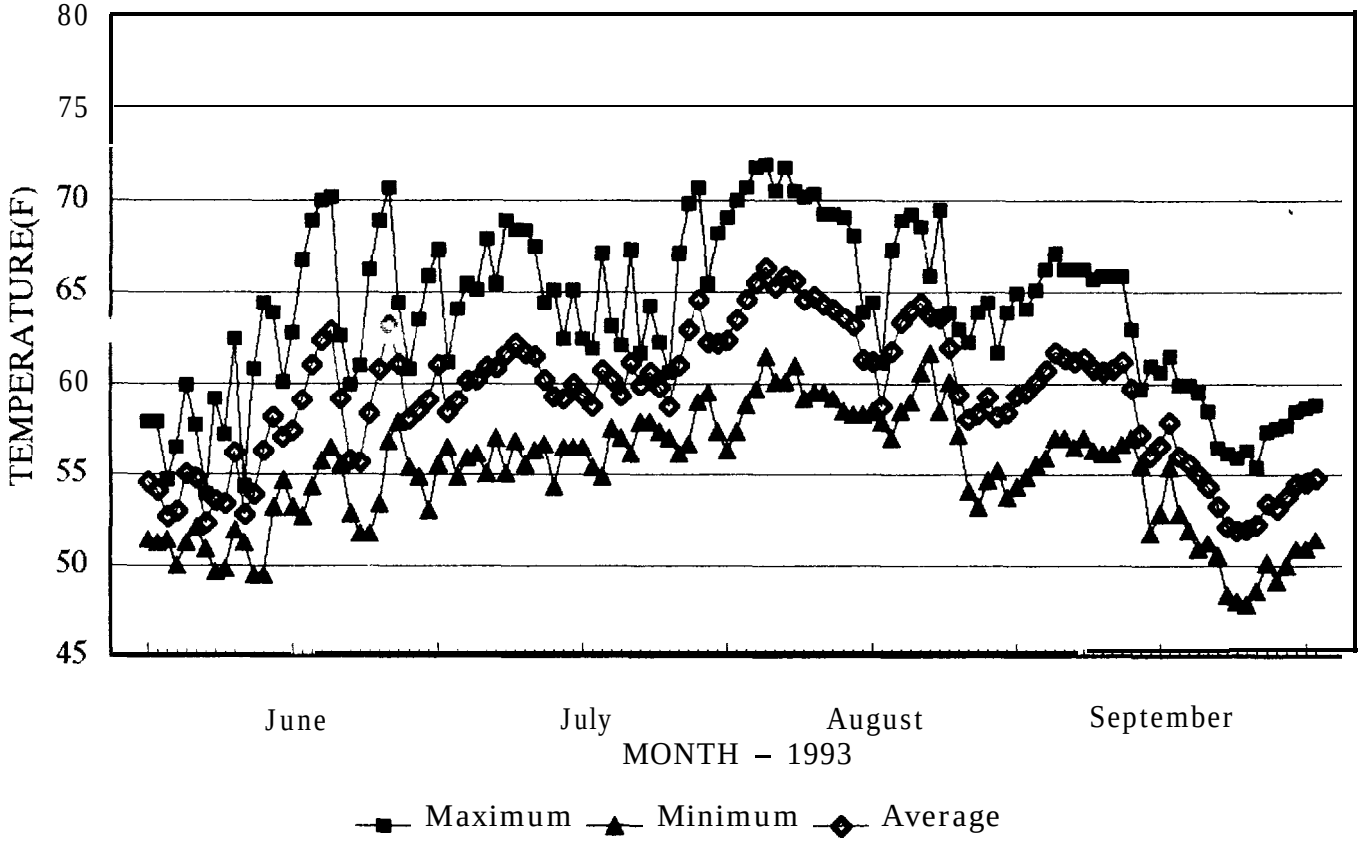
River Mile 56 (West Reservation Boundary)



File Name: UMRM5693
Graph File Name: UMAR5693

UMATILLA RIVER

River Mile 78.5 (Downstream Mouth of Meacham Creek)



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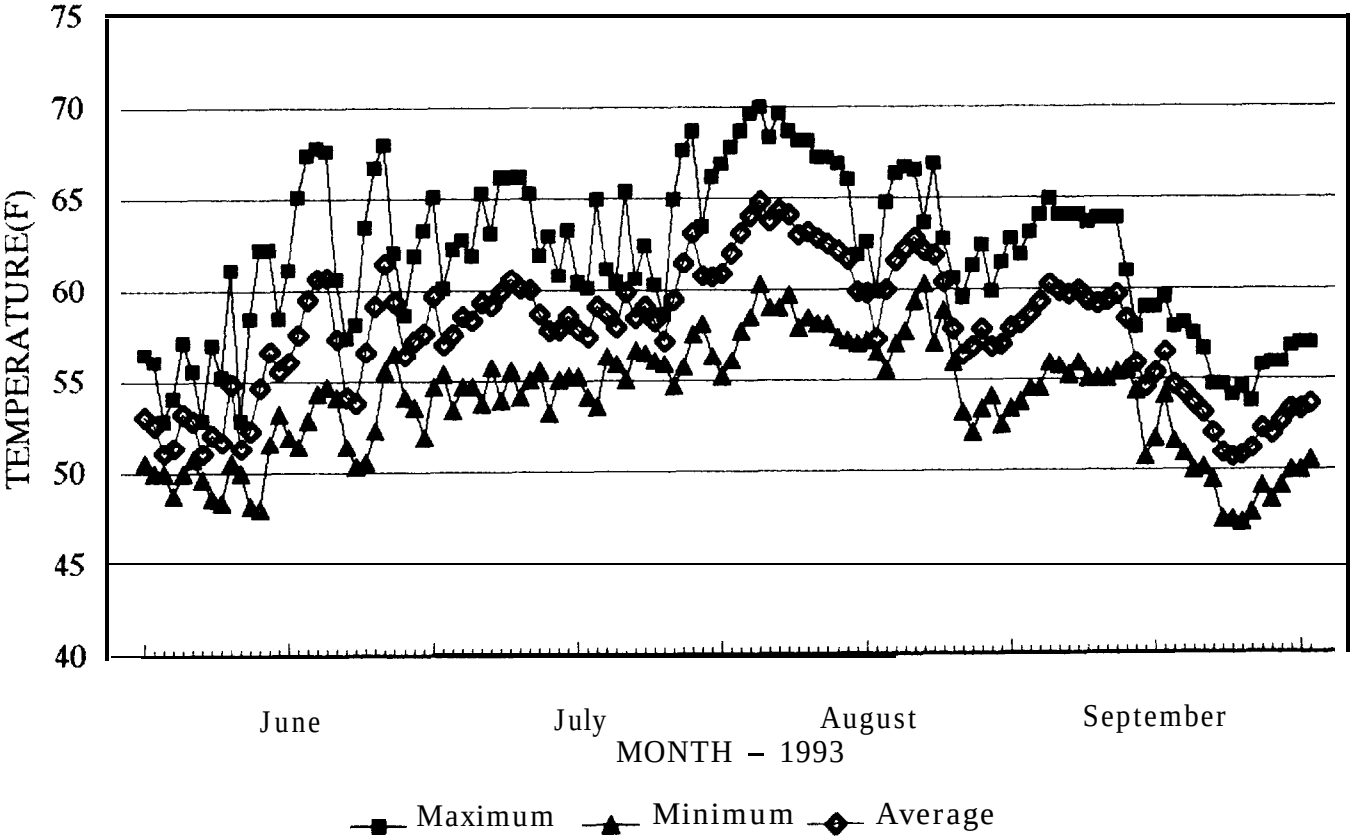
Graph File Name: UMAR7893

UMATILLA RIVER

River Mile 79 (Upstream Mouth of Meacham Creek)



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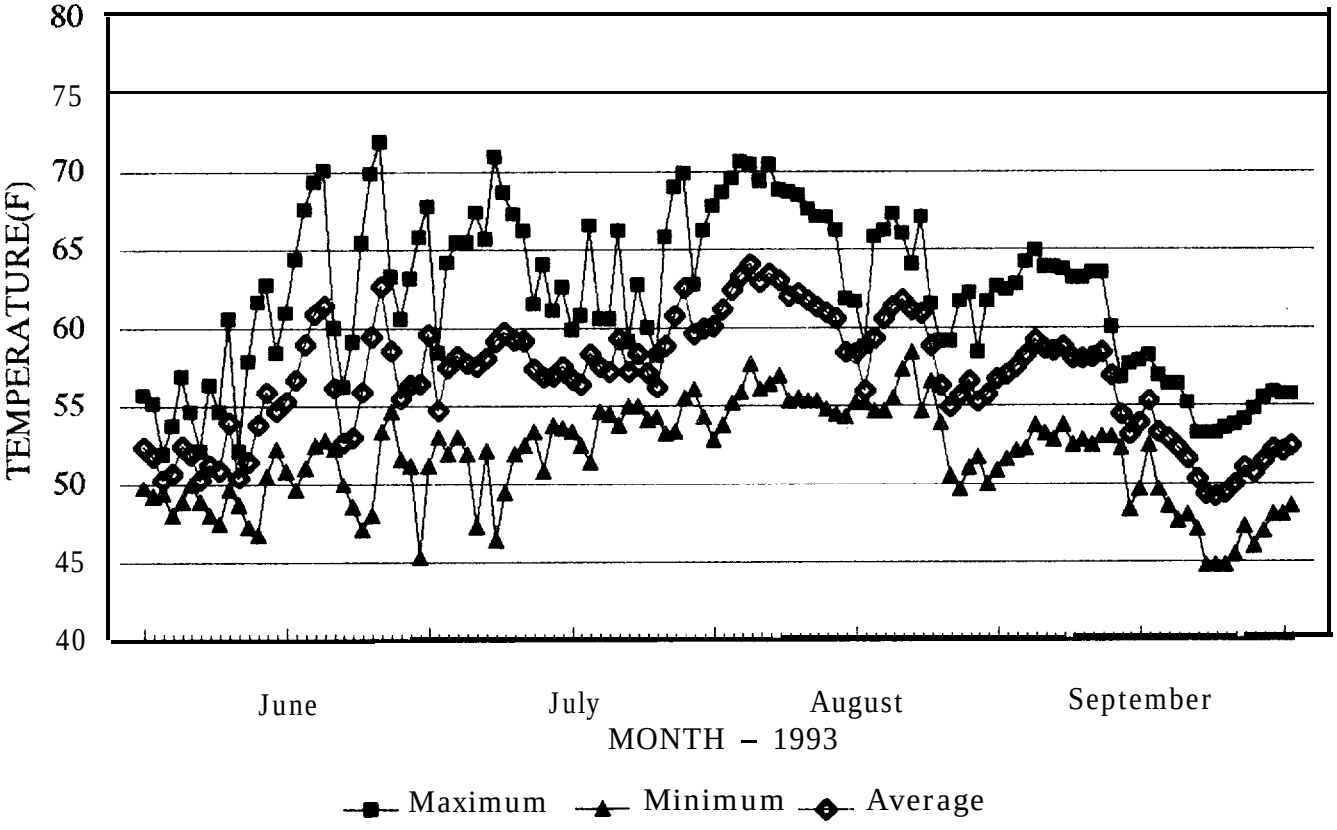
Graph File Name: UMAR7993

UMATILLA RIVER

River Mile 81.7 (USGS Gage Station)



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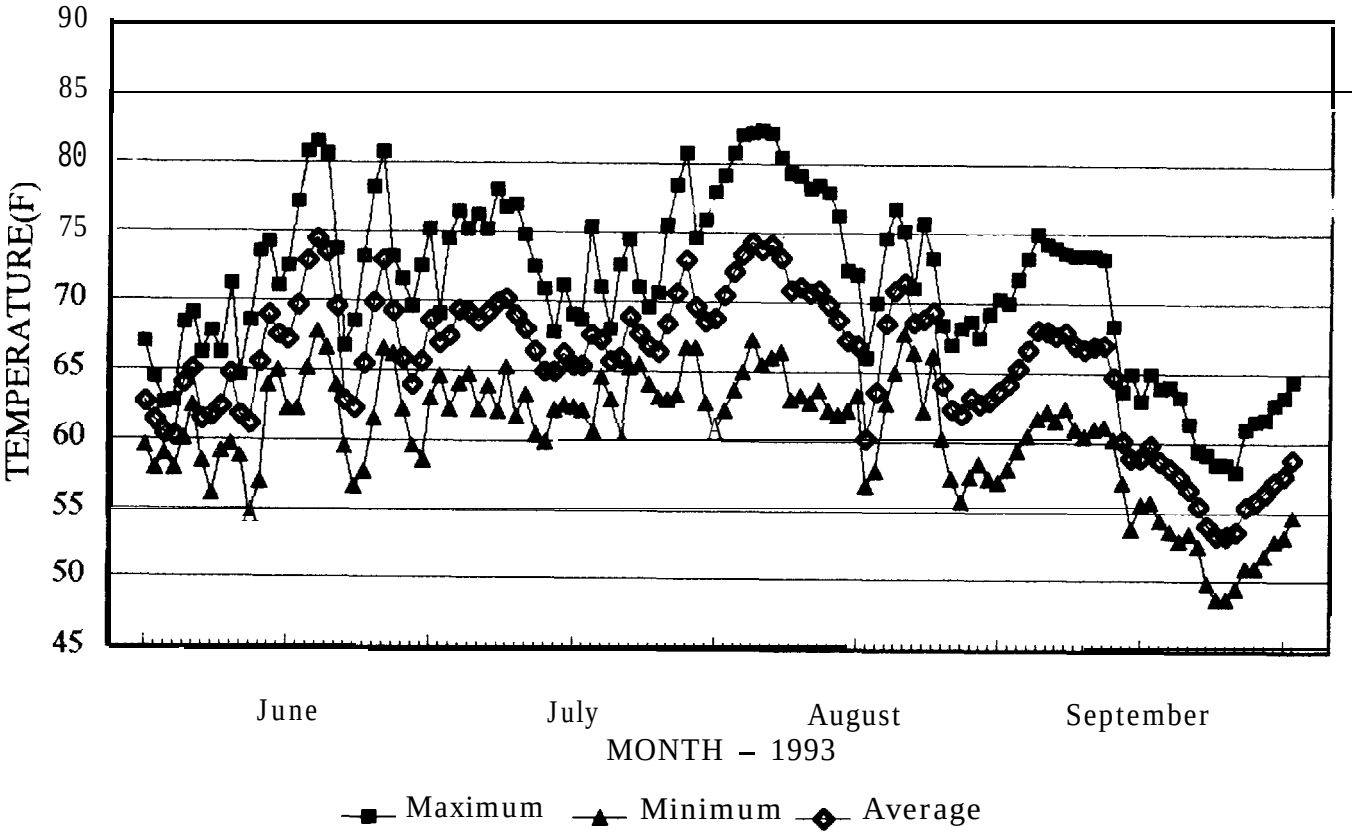
Graph File Name: UMAR8193

WILDHORSE CREEK

River Mile 0 (Confluence with Umatilla River)



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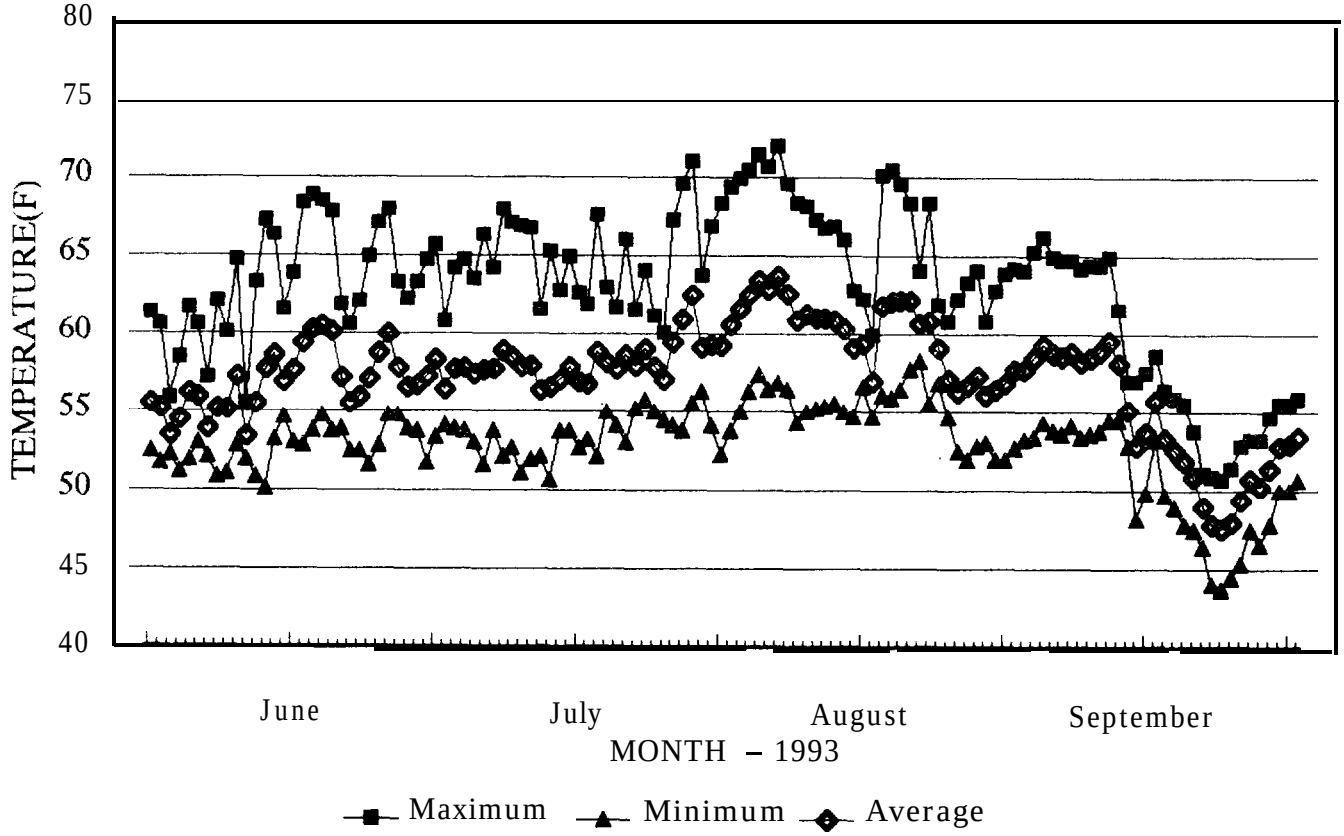
WILDHORSE CREEK

River Mile 26



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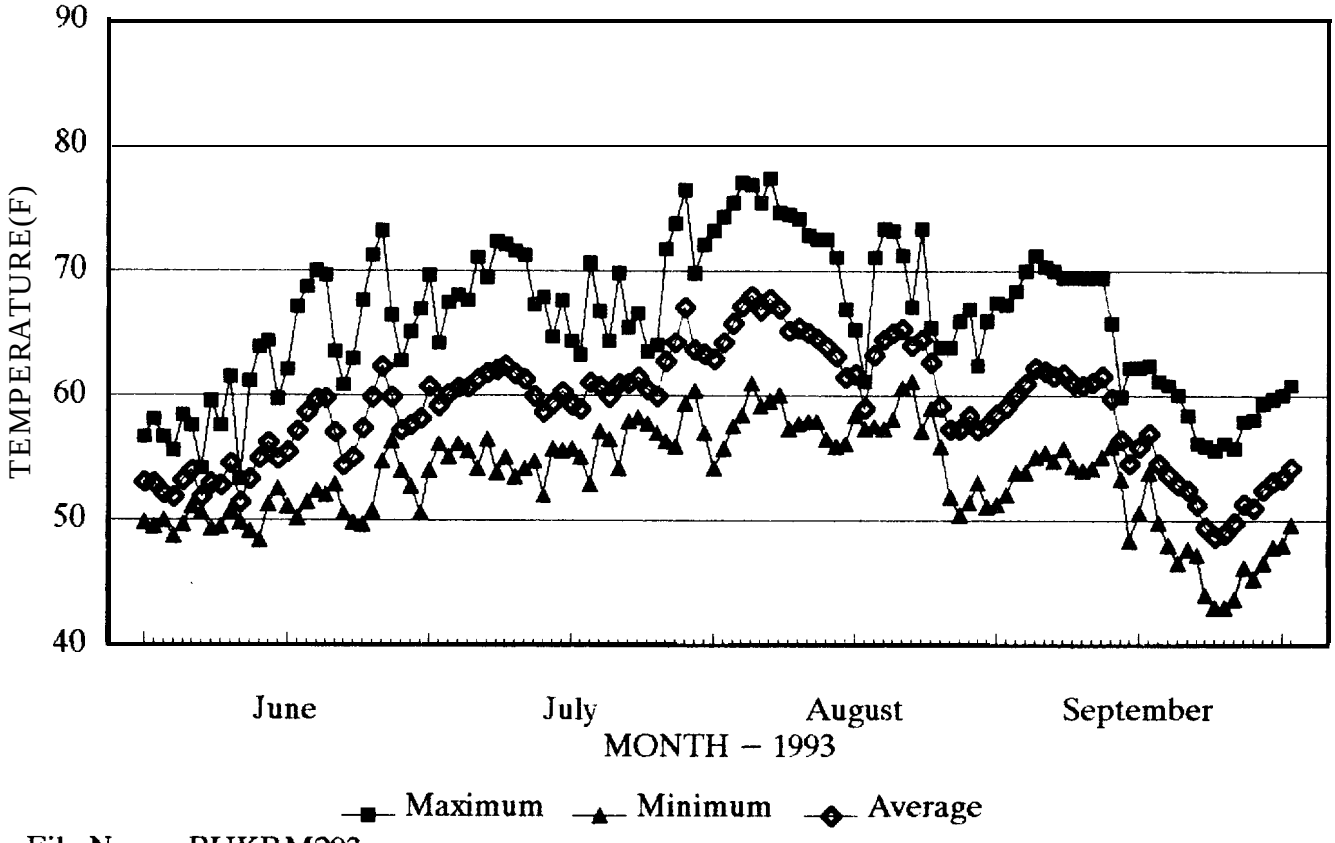
BUCKAROO CREEK

River Mile 2



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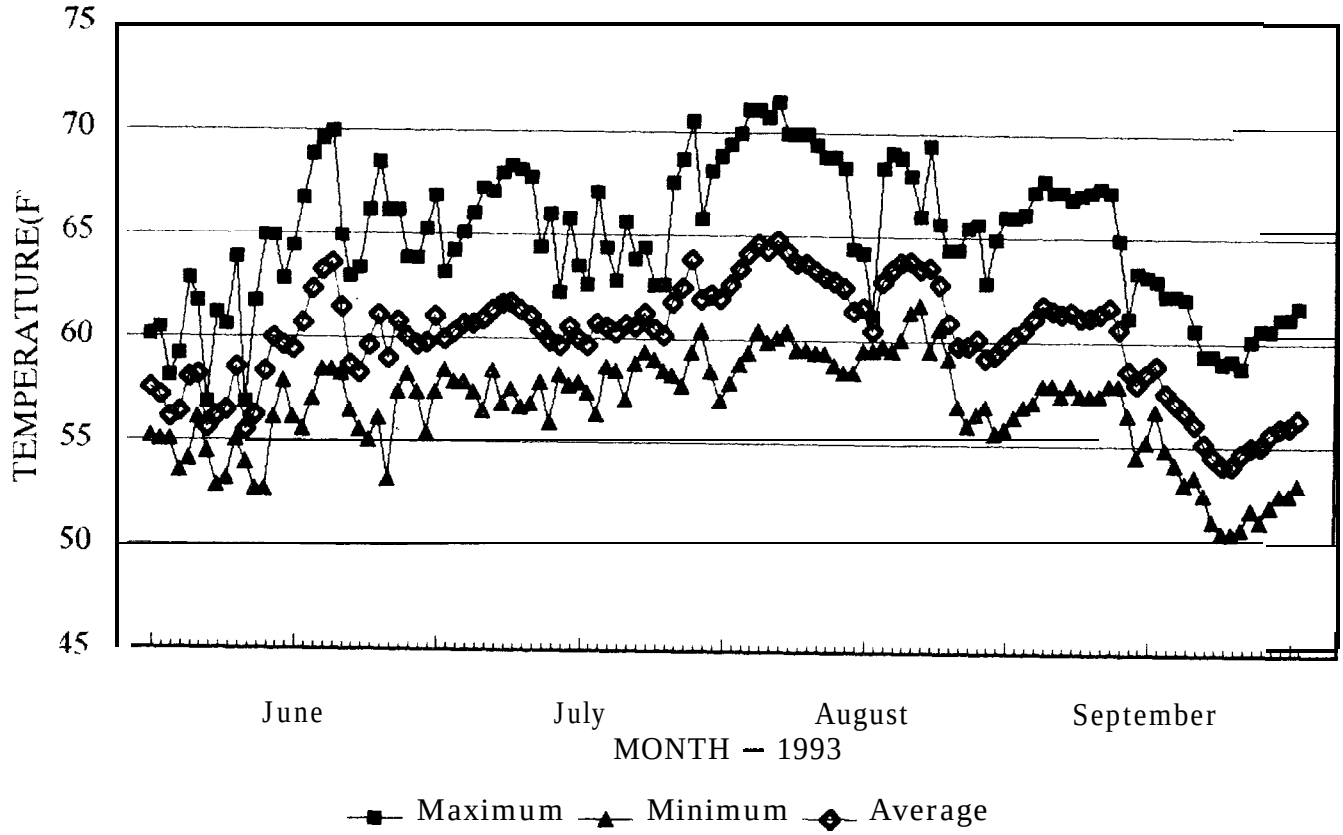
SQUAW CREEK

River Mile 2



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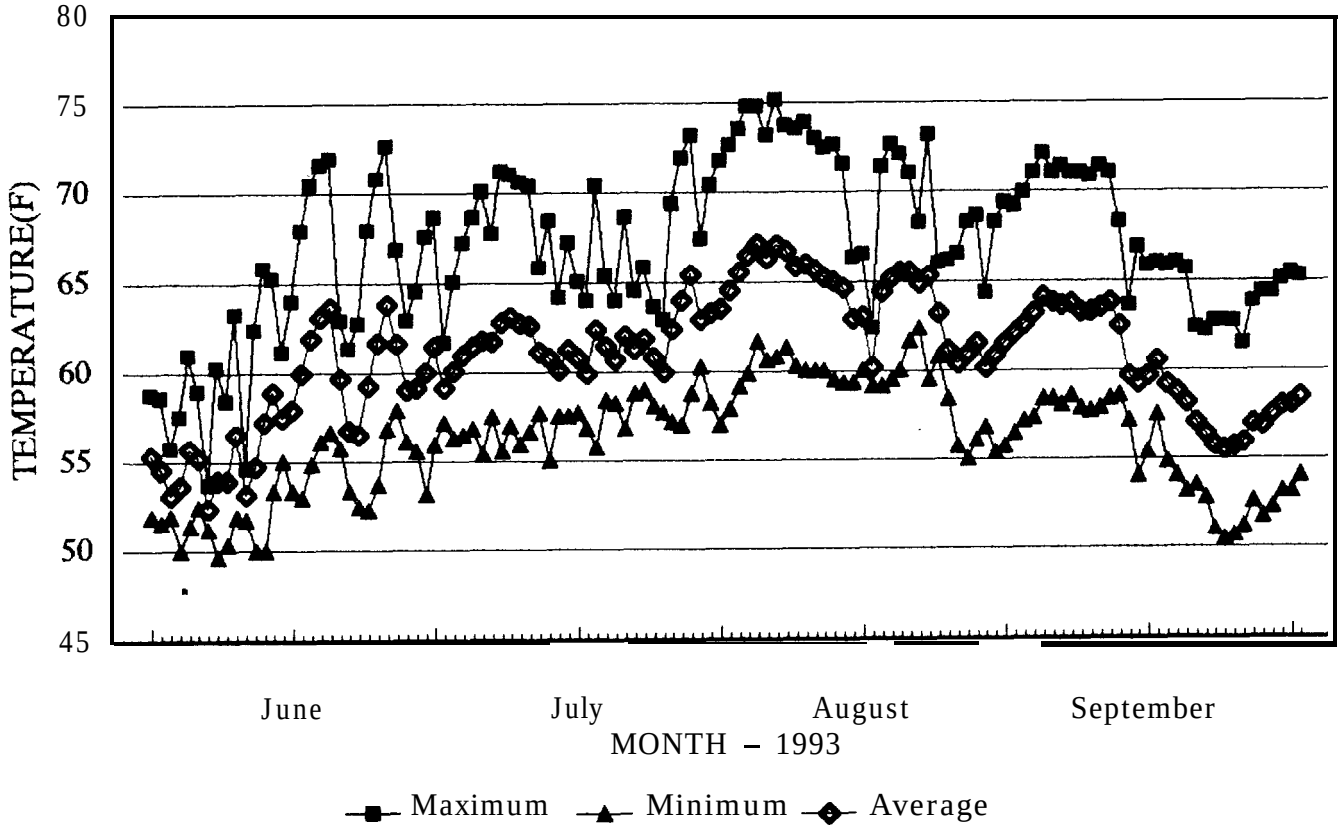
MEACHAM CREEK

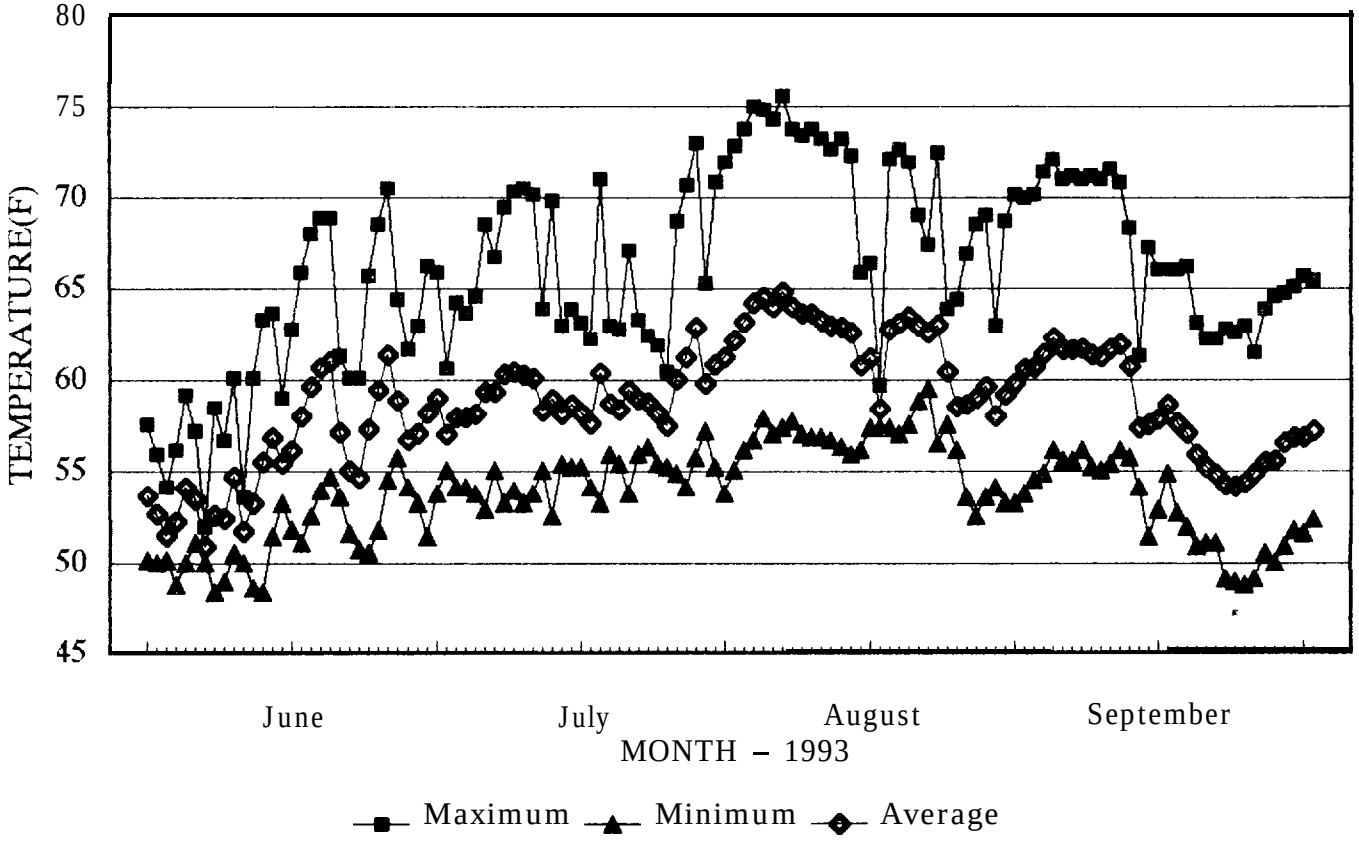
River Mile 2 (USGS Gage Station)



File Name: MEARM293
Graph File Name: MEACH293

MEACHAM CREEK

River Mile 5.25 (East Reservation Boundary)



File Name: MEARM593
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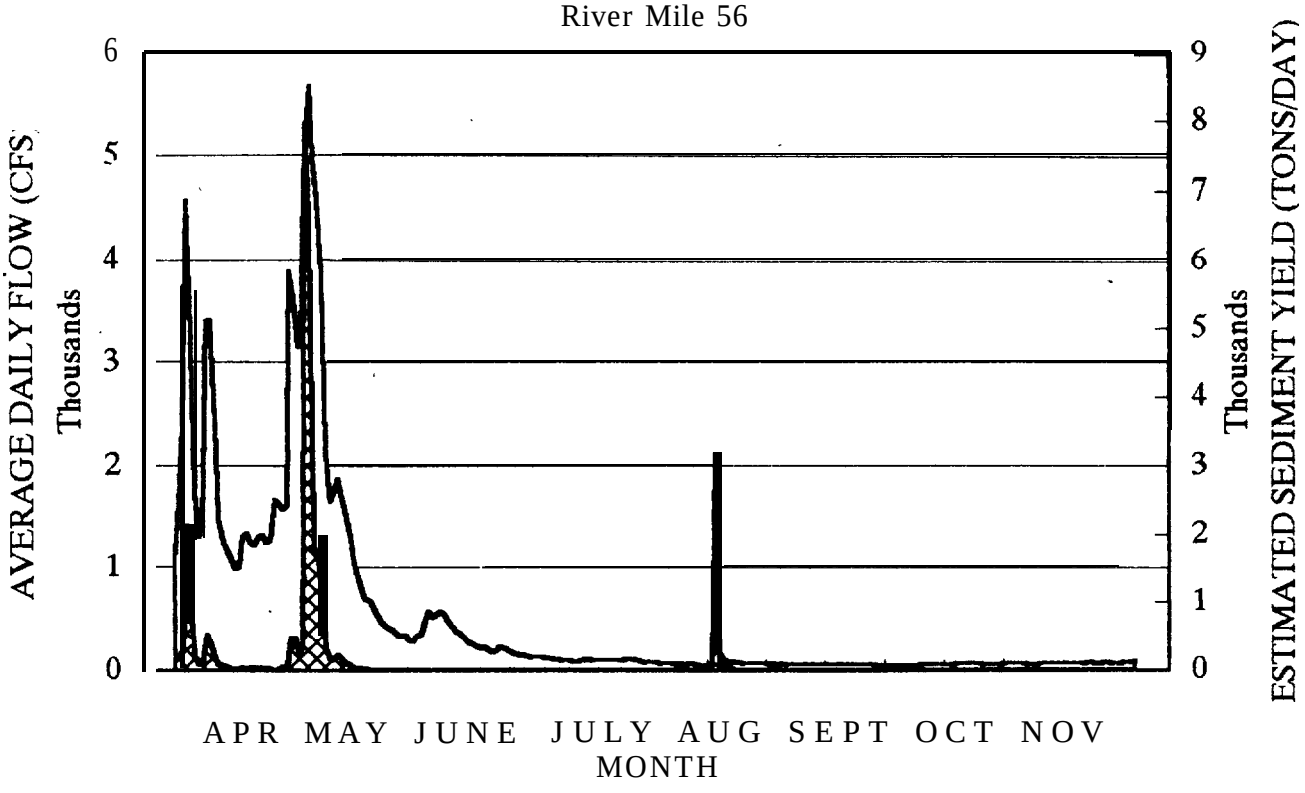
Appendix B

Suspended Sediment ‘Graphs

1993 UMATILLA RIVER SUSPENDED SEDIMENT DATA

River Mile 56



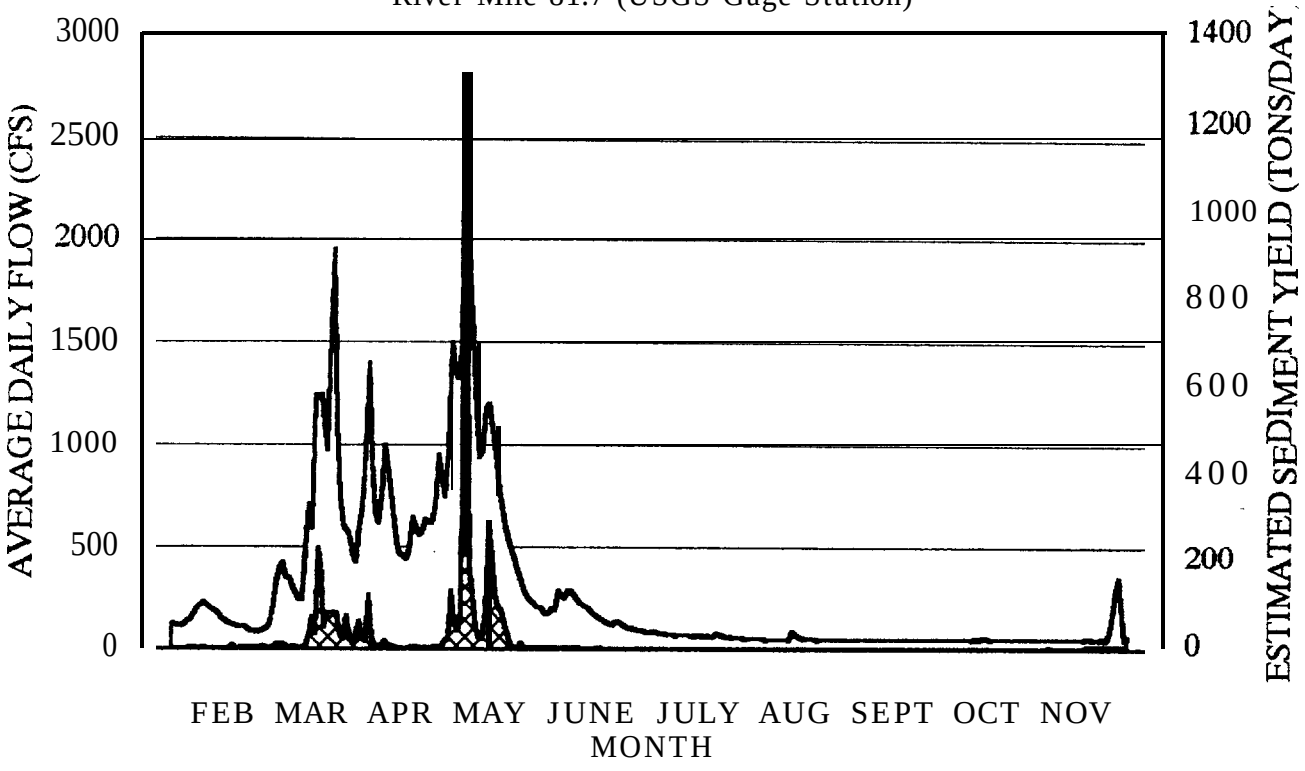
Flow (CFS)

Estimated Sediment Load (Tons/Day)

File Name: USED5693

Graph File Name: U5693SED

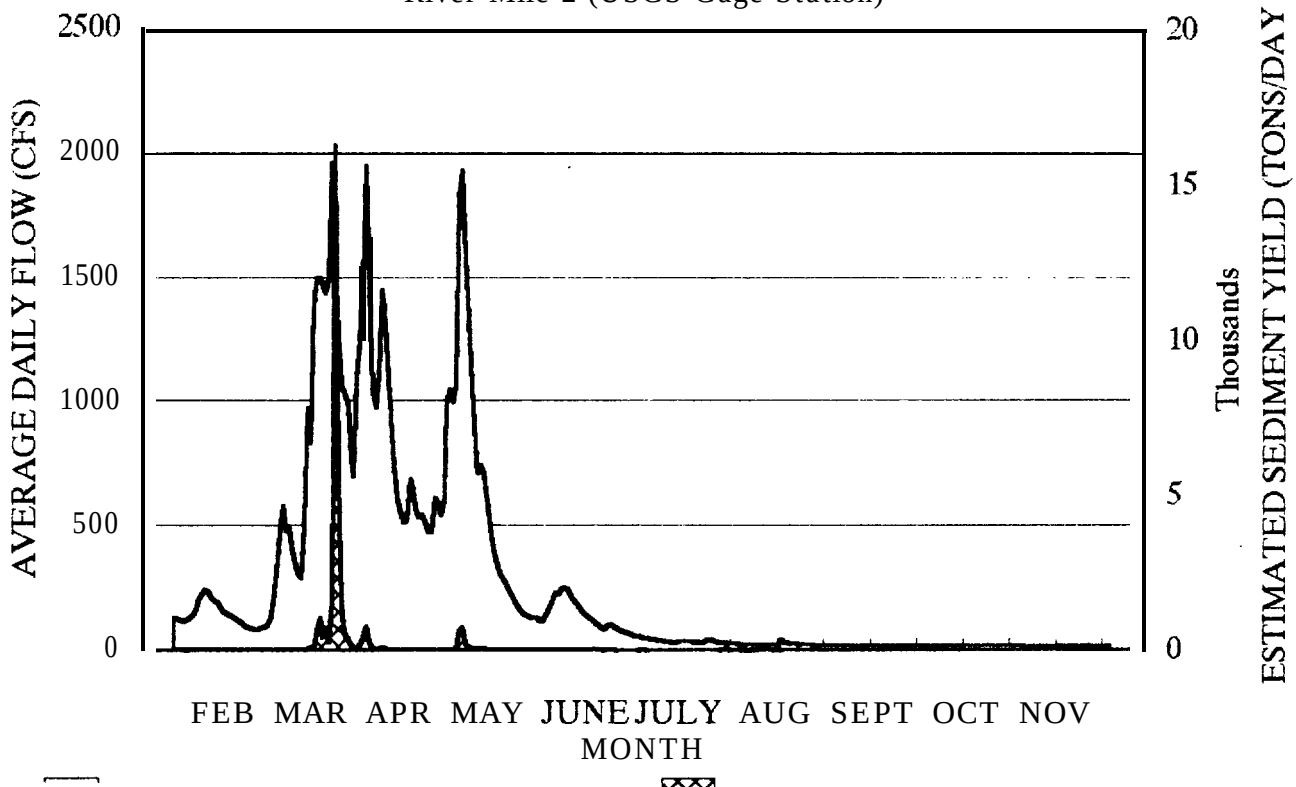
1993 UMATILLA RIVER SUSPENDED SEDIMENT DATA
River Mile 81.7 (USGS Gage Station)



Flow (CFS) Estimated Sediment Load (Tons/Day)

File Name: USED8193
Graph File Name: 93SEDU81

1993 MEACHAM CREEK SUSPENDED SEDIMENT DATA
River Mile 2 (USGS Gage Station)



File Name: MCSED293
Graph File Name: 93MCSED2

Appendix C

News Article, Watershed Restoration Efforts

Tribes seek holistic approach

Stream improvements save soil and help fish

By WIL PHINNEY
of the East Oregonian

PENDLETON—As muddy as Wildhorse Creek is in the spring, and as hot and low as it gets in the summer, trout, steelhead -even coho salmon — have tried to migrate upstream to spawn.

The Confederated Tribes, with help from farmers and landowners, would like to improve water quality and help the fish reproduce and thrive there again, as well as in other tributaries in the upper Umatilla River basin.

Toward that goal, the Tribes' fisheries program, which already has spent more than $1 million in a five-year enhancement project to improve the region's streams; are embarking on a more holistic approach that addresses entire watersheds.

The scope of the action is designed to encourage changes in farming and forestry practices, which could result in less erosion and increased instream and groundwater storage capacity. That would mean less sedimentation downstream, increased livestock forage in adjacent pastures and denser streamside vegetation providing cooler stream temperatures for fish.

Next week, on Tuesday and Thursday, the Tribes are inviting landowners, sportsmen, resources agencies and other interested individuals to help identify problems and develop an action plan for the Umatilla River watershed upstream of Mission and in the Wildhorse Creek watershed.

"We want to find creative solutions to help farmers by improving tillage practices," said Todd Shaw in the Tribes' Fisheries Program.

Such practices could include terraces, strip cropping, contour farming, grass waterways and filter strips.

Additionally, the Tribes want to construct fences to keep livestock out of stream beds.

"We want to work with ranchers to build high-tensile fencing with water gaps, develop off-stream water sources for cattle and pasture-rotation plans," Shaw said.

Gary James, manager of the tribal fisheries program, said the Confederated Tribes can be the conduit for obtaining funds to construct and maintain fencing. Landowners will be

See Streams / 2A

Watershed Meetings

WHO: Landowners, sportsmen, resource agencies and others interested in watershed problems and needs

WHY: Identify solutions and develop action plans.

WHEN and WHERE:7 p.m. Tuesday at the Reservation Longhouse Annex, Mission: 7 p.m. Thursday at Weston-McEwen High School in Athena.

FOR' MORE INFO: Todd Shaw or Gary James. Confederated Tribes' Fisheries Program, 2764109.

Streams

Continued from 1A

asked to sign easements and agreements that will allow the work to be done.

"There are no ESA (Endangered Species Act) listed fish in the Umatilla Basin and, frankly, it would be nice to keep it that way to avoid tighter federal regulation," said James.

"If we work with landowners now and identify problems and solutions, identify resource values that will sustain fish and wildlife, it will be much easier than if we are forced to comply with federal restrictions. That's what the Tribes want and we think that's what landowners want," James said.

While the Tribes are interested in improvements away from the streams, riparian enhancement still is a key component in the watershed-wide approach.

On Wildhorse Creek, for example, plans call for structures to be installed that will capture silt as it flows downstream. The "good rich top soil folks are losing upstream" will be deposited along streambanks, then planted with native grasses, willows and cottonwoods, Shaw said.

"We don't want to dictate to farmers," said Shaw. "We're going to them for ideas and suggestions so that we can plug them into the process."

The new holistic approach to watershed-wide problems is a natural outgrowth of a stream restoration program that began in 1988 when nearly 200 miles of Umatilla River basin streams were identified as in need of improvements.

The program, funded by the Bonneville Power Administration, provided money for the Confederated Tribes, the Oregon Department of Fish and Wildlife and the U.S. Forest Service to address "hot spots" in the Umatilla River basin.

Improvements included channel reconstruction, bank stabilization, instream structures, riparian fencing, and riparian seeding and planting.

River and its forks, plus Meacham, Boston Canyon, Birch and Thomas creeks.

In addition to the BPA-funded anadromous fish habitat enhancement project, the Tribes' Department of Natural Resources, directed by Mike Farrow, are involved in six other strategies designed to improve the health of the river system.

Those projects include:

- Non-point Source Pollution Management Plan, funded by the Environmental Protection Agency. It gives the Tribes authority and jurisdiction to manage water under the Clean Water Act. The program, to start this year, will look at the overall basin, tying land-use practices to water-quality conditions.
- Wildlife Wetlands Inventory Project, another EPA-funded program, started in 1993. It is identifying and developing actions to protect and restore existing and historic wetlands in the basin.
- Wildlife Corridors Mitigation Project, funded by the BPA, also started last year. It is designed to identify opportunities and implement actions to protect and improve wildlife habitat.
- Union Pacific Railroad Double Track Expansion project, funded by UP as mitigation for past and anticipated expansion impacts on fish and wildlife habitat. A priority is restoration of the hleacham Creek subbasin.
- Agreements with irrigation districts, an ongoing effort that would result in increased instream flows, water-quality monitoring, plus riparian and wetland habitat restoration in the Echo and Stanfield areas.
- Umatilla Basin Project, the $40-million program funded by Congress to increase instream flows to enhance fish habitat in the lower Umatilla River. The project, which boasts the cooperation of the Tribes and irrigators, is a water exchange that pumps Columbia River water to irrigators who leave water in the Umatilla River

Appendix D

Scoping Meeting Summaries

April 26, 1994 - Upper Umatilla River Watershed Scoping Meeting; 38 people attended; following data obtained from 15 respondents:

General Questionnaire (no name required)

1) I am here as:

3	an interested landowner
4	a representative of a natural resource management entity
6	a representative of an interest group or organization
1	an interested citizen (non-landowner)

2) I feel there are problems in the subject watershed area which impact water quality and quantity at the following level (check one):

no problems; ____ slight problems; 5 moderate problems; 10 severe problems

3) I feel the top three impacts to stream and watershed health in the subject area of discussion are (Number of times identified by respondents):

1. Agricultural practices (14)
2. Lack of upland/riparian vegetation (8)
3. Fores try Practices (5)

4) I feel the top three potential solutions to addressing watershed health impacts in the subject area are (Number of times identified by respondents):

1. Improved agricultural practices (3)
2. Revegetation of upland/riparian areas (3)
3. Erosion/sediment control (3)

5) I found out about this public meeting by Newspaper, word of mouth, letter, agency contact & flyer.

6) Any comments about the need or intent of this meeting or the way in which CTUIR advertised and conducted it, etc?

*better description of meeting location
*improve presentation
*have large PR campaign
*more active facilitation

Upper Umatilla River Basin

Problems and *issues* in riparian areas as identified through public participation and discussion at April 28, 1994 Watershed Scoping meeting:

• Lack of natural, lateral channel movement due to stream channelization, diking and other confinement activities

● ChanneIization and maintenance activities by *the Union Pacific* Railroad and highway departments

● DeueIopment and *flood* control activities resulting *in* reduced flood plain *areas*

• Loss *of riparian corridor widths*

• Loss of natiue plant *species and lack of replanting efforts*

*Confinement of stream channels due to poor bridge *design*

• Excessive *streambank erosion*

• Livestock *overgrazing in riparian areas and wateiing from* streams

• Impacts *of* Umatilla *and Columbia Basin Dams to fisheries resources*

• Poor cropland practices

• Extreme *runoff euents*

• *Poor logging practices*

**Lack* of wood *in* stream channels *for fish habitat due to logging and grazing activities*

• Low *water table eleuations in flood plain areas*

• Lack *of beauer* and other riparian animals

• *Excessive sedimentation resulting in high water temperatures*

**Increased stream gradient and lack of pools for fish habitat diuersity*

• Spraying chemicals along waterways

Upper Umatilla Riuer Basin

Riparian Area Potential Solutions as identified through public participation and discussion at April 28, 1994 Watershed Scoping meeting:

*Placement of instream structures

- Planting/seeding natiue species trees and grasses
- Exclude livestock from riparian areas with fence and develop offstream watering sites
- Expand flood plain areas and improve natural flood plain junction (example: remoue railroad dikes)

*Restore riparian wetland areas

*Reintroduce beauer, once riparian vegetation has been established

- Construct runoff retention ponds/livestock watering ponds
- Fence off spring areas
- Identify funding sources
- Establish creative/improved riparian forest practices (example: controlled popular harvest)
- Enforce environmental regulations

*State Government, Federal Government and Tribes need to educate and work with landowners

- Increase riparian buffer widths regarding logging practices
- Implement bio-engineering (soft approaches) rather than rip-rapping
- Place wood into streams for fish habitat
- Revise CRP Riparian Protection
- Improve grazing practices

Upper Umatilla River Basin

Problems and issues in upland areas as identified through public participation and discussion at April 28, 1994 Watershed Scoping meeting:

**Mixed ownership/multiple agency jurisdictions*

**Lack of a unified, holistic approach to address issues*

- *Lack of funding to address needs*

- *Implementation of improvements increases the costs and loses income to landowners (short-term)*

- *Rapid runoff resulting in excessive erosion*

- *Detrimental timber harvest practices*

- *Roads and poor cropland practices result in water quality problems from sedimentation and chemicals*

**Lack of education/knowledge regarding land use issues*

- *Lack of monitoring to define current conditions and relate to differently managed areas (example: terrace fields versus non-terraced fields)*

**Noxious weeds outcompeting native uegetation (don't stabilize soil as we/l)*

- *Decreased soil infiltration rates*

Upper Umatilla Riuer Basin

Upland Areas Potential Solutions as identified through public *participation* and discussion *at* April *28, 1994* Watershed Scoping meeting:

**Use voluntary* programs *when dealing with landowners regarding management/implementation measures*

- *Have unified management programs addressing "all" interests to reach a consensus of the problems and increase chances of funding*
- *Develop incentive programs - provide more cost sharing*
- *Highlight the* good *management practices*
- *Educate,* cooperate and communicate
- *Thoroughly review timber sales* and identify *all* impacts
- *Monitor "good" and "bad" areas to document problems/improvements*
- *Develop more erosion control programs and incentives*
- *Lobby more* for *conservation program incentives (CRP,* wetlands programs, etc.)
- *Revise weed control methods (example - plant native grasses/shrubs instead* of *plowing in highway right-of-way areas)*
- *Have county highway department maintain improvements (grass* and tree *plantings) in right-of-way* areas
- *Improve Timber harvest practices (examples: less clear cutting and more selective harvest and improve road management practices)*
- *Enforce environmental regulations*
- *Improve* upland grazing *practices*

April 28, 1994 - Wildhorse Creek Watershed Scoping Meeting; 45 people attended, 16 respondents

General Questionnaire (no name required)

1) I am here as:

8	an interested landowner
5	a representative of a natural resource management entity
1	a representative of an interest group or organization
2	an interested citizen (non-landowner)

2) I feel there are problems in the subject watershed area which impact water quality and quantity at the following level (check one):

no problems; 3 slight problems; 1 moderate problems; 10 severe problems

3) I feel the top three impacts to stream and watershed health in the subject area of discussion are (in order of priority):

1. Agricultural practices & related sedimentation problems
2. Forestry Practices
3. Flooding concerns

4) I feel the top three potential solutions to addressing watershed health impacts in the subject area are (in order of priority):

1. Continuation of CRP Program
2. Improved Agricultural Practices (terraces, grass filter strips, grass waterways, etc.)
3. Riparian Restoration (fencing and plantings)

5) I found out about this public meeting by Newspaper, word of mouth, letter, agency contact & radio.

6) Any comments about the need or intent of this meeting or the way in which CTUIR advertised and conducted it, etc?
*appreciated encouraging cooperation & input
*short notice regarding meeting date
*what economical repercussions to landowner
*how will government manage land better
*good, avoided defensiveness
*newspaper article unclear on meeting dates
*good discussion/involvement of landowners
*good start
*enjoyed making comments on one's views

Wildhorse Creek Subbasin

Problems and issues in riparian areas *as identified through public participation* and *discussion at April* 28, *1994 Watershed Scoping meeting:*

• No *studies have been done demonstrating impacts people haue had on wildlife/fisheries (No pre-*existing *conditions* data *is available)*

• *Width* □↗ *corridor* to *be fenced* from *livestock, flood* concerns *with* increased water *table elevations*

*Flood *liability - will Iandowner be liable or agency* who *does improvements be liable fur* flood *damages* to *owner's property?*

• *Potential loss of CRP Program*

• *Impacts of beaver on riparian fencing (flooding concerns)*

• *As stream regains its flood plain, will riparian corridor width (as designated in agreement) change or increase?*

● *Riparian improvement cross fences may cause calves to become caught in the stream channel*

**High flows tearing out riparian fences*

**Maintenance of improved riparian corridor and fencing*

• *Noxious weed control in managed riparian corridor (needs to be done in a timely manner)*

**Fragmented jurisdiction/multiple agencies*

**Steep, eroded stream channel*

• *Low water tab/e elevations*

*Stream channelization increasing stream energy and contributing to more erosion downstream

• *Unstable* streambanks resulting *in* increased *flood* potential

• *Loss of natural floodplain function*

• *Livestock grazing/watering in riparian areas*

• *Lack of off-site watering sources for livestock.*

Wildhorse Creek *Subbasin*

Riparian Area Potential Solutions as identified through public participation and discussion at April 28, *1994* Watershed *Scoping* meeting:

**Build dams in headwater areas to reduce high flow impacts* and *release water gradually*

• *Encourage congressional support* of *CRP Program continuation* (at *a minimum target continued protection of riparian corridors)*

**Increase law enforcement during hunting/recreational seasons*

**Increase monitoring of sediment loads to attempt to identify "problem areas"*

● L$antify *sediment loads* from *each causative factor (roads, forest practices, crop lands, etc.)*

. *Identify base-line (pre-existing) sediment conditions in the watershed*

**Balance regulatory and voluntary conservation approaches*

• *Emergency flood control by landowners (clearing stream channel)*

. *Unified watershed multiple agency approaches (coordinate resource management plan in "workable" units - Wildhorse Creek Watershed* too large

. Place *drop* structures in channel to *retain silt and assist in raising stream bed*

**Identify areas with best opportunities considering level* of habitat *problem and Iandowner economies*

● *DeueIop* better *education/communication* programs on treatment of specific problems

● *Haue* landowners educate other *landowners regarding benefits*

. *Need easier, more streamlined instream permit* system *to implement improvements*

• *Need more* tax credits, incentive programs and need to address landowner liabilities (flooding)

● *Deuelop management plans* that incorporate *management and* structural *practices (strive for quality habitat, but factor in landowner economics)*

Wildhorse Creek Subbasin

Problems and issues in upland areas as identified through public participation and discussion at April 28, 1994 Watershed Scoping meeting:

- Inadequate terracing in crop land areas (no dissipation of water - inadequate outlets)
- Multiple jurisdictions - agencies, rules, etc.
- Freshets and frozen ground related erosion
- Lack of stable waterways for runoff
- Potential loss of CRP Programs
- Noxious weeds outcompeting natiue plant species
- Establishment of "new" wetlands from increased water table elevations resulting in loss of agricultural production lands

*Tribal farming leases have too short of a lease period (4 years)

*law enforcement regarding recreational land abusers (should landowner be responsible for trespasser's negligence)

- Fragmentation of timber practices on private lands throughout the watershed (everyone is using different harvest criteria/guidelines)

- Instream permit process needs to be streamlined and more efficient for the applicant.

Wildhorse Creek *Subbasin*

Upland Area Potential Solutions as identified through public participation *and discussion at* April 28, *1994* Watershed Scoping meeting:

**Maintain cost share programs* for *terracing*

. *Have an aggressive weed control program*

•*Have landowners educate other landowners regarding benefits*

. *Political lobbying to continue CRP Program (obtain tribal and* public support)

•*Start restoration activities in uppermost parts* of the *watershed*

**Develop management plans that incorporate management and structural practices (strive* for *quality habitat, but factor in landowner economics)*

. Plant *more* filter *strips to reduce upland erosion* and *rapid runoff*

. *Prouide an easier, more* streamlined *permitting process to implement improvements*

. *Need more tax credits, incentive programs and need to address landowner liabilities (loss of production)*

**Construct high energy dissipation structures or sediment* traps to *decrease erosion*

● *Identify areas* with *best opportunities considering level* □↗ *habitat problems and landowner concerns*

•*Develop* better *education/communication programs on treatment of specific problems*

● *DeueIop longer term tribal leases (currently 4 years),* so that *landowners will invest money into good conservation practices (terraces, grass waterways, etc.)*